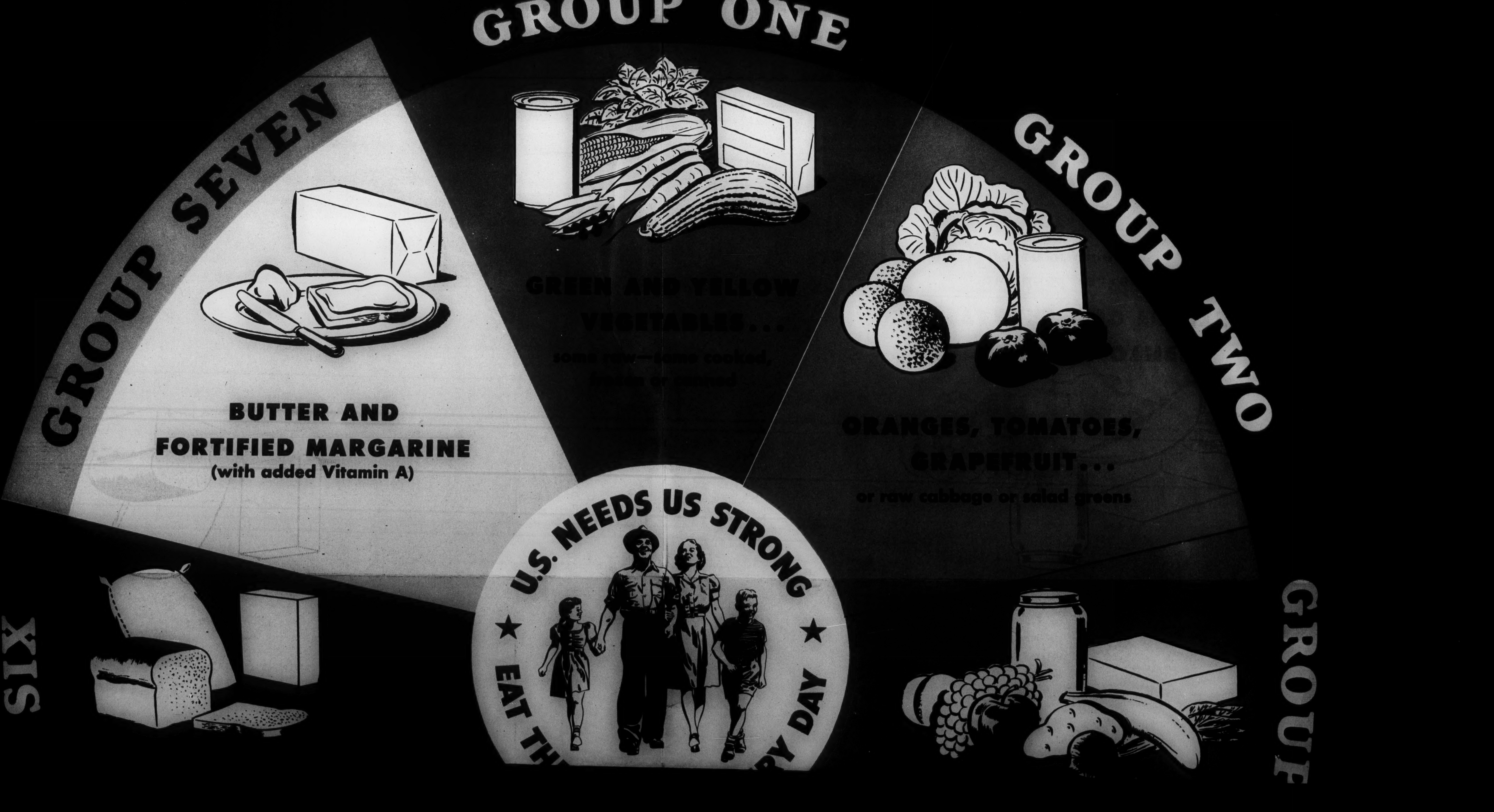
For Health...eat some food from each group...every day!


U.S. NEEDS US STRONG
EAT TH
RY DAY

GROUP ONE

GREEN AND YELLOW VEGETABLES...

some raw—some cooked, frozen or canned

GROUP TWO

ORANGES, TOMATOES, GRAPEFRUIT...

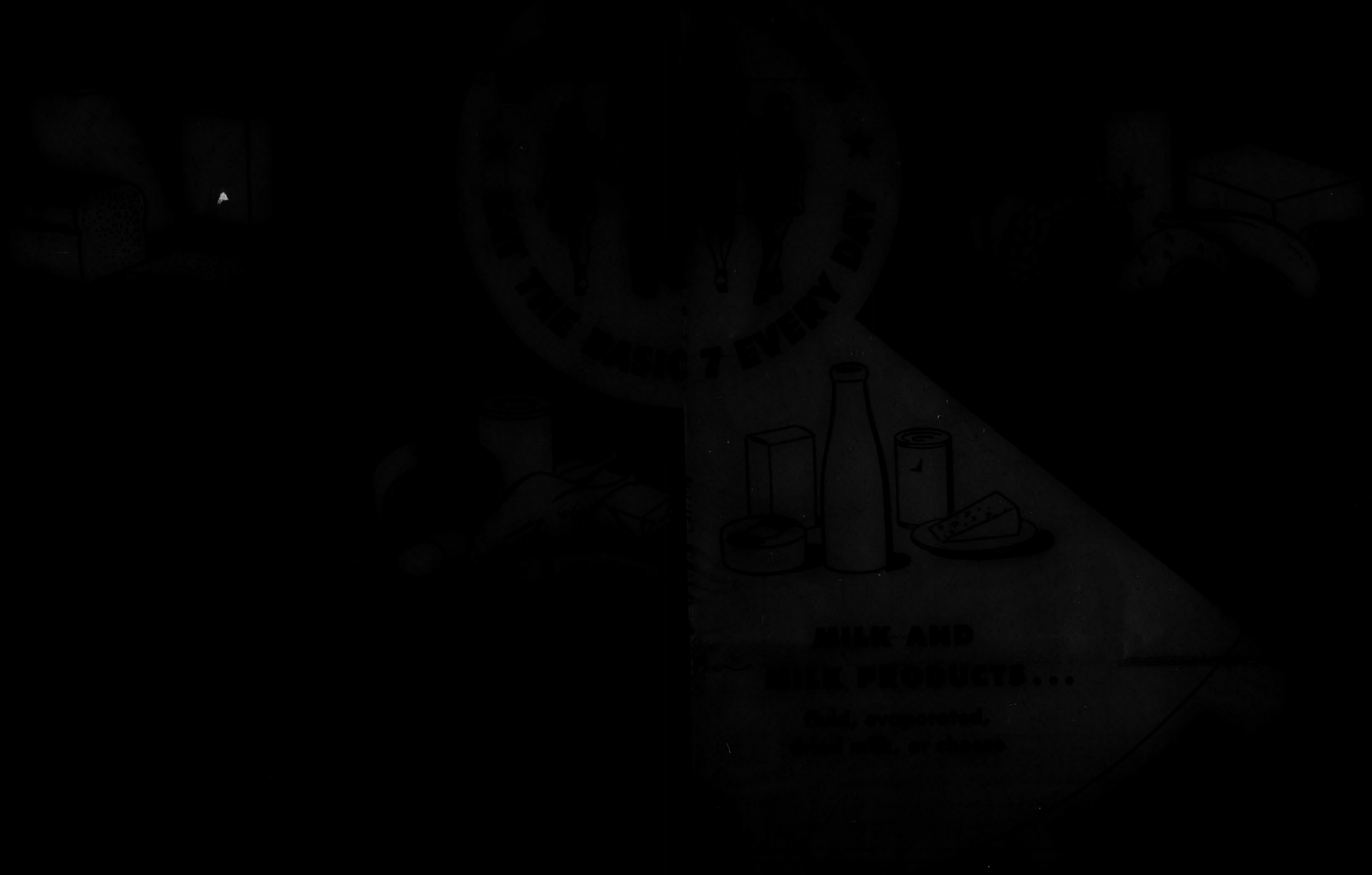
or raw cabbage or salad greens

GROUP SEVEN

BUTTER AND FORTIFIED MARGARINE
(with added Vitamin A)

SIX

GROUP


THE BASIC 7 EVERY DAY

MILK AND MILK PRODUCTS...

fluid, evaporated, dried milk, or cheese

MVR

MANUAL
OF
INDUSTRIAL NUTRITION

UNITED STATES DEPARTMENT OF AGRICULTURE
1862 1889

FOOD DISTRIBUTION ADMINISTRATION
Nutrition and Food Conservation Branch

MANUAL
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FOOD DISTRIBUTION ADMINISTRATION
Nutrition and Food Conservation Branch

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1943

This is the first in a series of pamphlets which will be prepared and distributed by the Nutrition in Industry Division, Nutrition and Food Conservation Branch, Food Distribution Administration, Washington, D. C. Requests for advice and material may be directed to one of the 7 regional offices of the Food Distribution Administration, or to the Washington office.

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FOREWORD

The development of mechanized warfare has made great numbers of industrial workers as essential to the conduct of war as the armed services. The size and effectiveness of the armies which a modern nation can mobilize depends greatly upon the productive capacity of the nation's war industries (which include agriculture and transportation). The more efficient our industry and the more productive our individual worker proves to be, the more men can be taken into our armed forces; the greater the quantities of essential supplies that may be sent to our allies; the smaller need be the dislocation of the civilian standard of living and the sooner will victory result. The problem of manpower, then, has two major components—one of supply and the other of conservation.

Workers in essential industries must be kept, insofar as possible, at the peak of working efficiency. The human being is a complex organism, being influenced by a large variety of environmental factors, so that the direction of his activities is not a simple affair. However, it is fundamental that the individual must be kept in good health if a high standard of working efficiency is to be maintained for any period of time, regardless of the direction in which his energies are to be expended. The maintenance of health involves many factors such as adequate housing, recreation, sleep, sanitation, disease and accident control measures, and nutrition. We can afford to neglect none of these. Least of all, perhaps, can we afford to overlook the importance of the factor of nutrition.

W. H. Sebrell

Associate Chief,
Nutrition and Food Conservation Branch,
Food Distribution Administration.

THE NATIONAL NUTRITION PROGRAM FOR INDUSTRY

The creation of a Nutrition Policy and Planning Committee, August 1940, with representation from the chief Federal agencies concerned with nutrition, marks the beginning of the present government-inspired campaign to improve and maintain the nutritional status of the American people. On September 3, 1941, the Office of Defense Health and Welfare Services was established, by Executive order, within the Office for Emergency Management of the Executive Office of the President. The development and direction of a national nutrition program then became the responsibility of the Nutrition Division of this office.

As of March 1943 the Nutrition Division of the Office of Defense Health and Welfare Services was incorporated within the Nutrition and Food Conservation Branch of the Food Distribution Administration by Executive Order. The Food Distribution Administration has nutrition representatives in each of its 7 regional offices. These representatives function as consultants to the State and local nutrition committees in their regions.

The committees, in turn, constitute the operating agency for the prosecution of the nutrition program in the workers' homes and communities.

The Nutrition in Industry Division of the Nutrition and Food Conservation Branch is primarily concerned with promoting proper eating conditions and the serving of nutritious foods within the industrial plant, and in obtaining the active cooperation of labor groups in the promotion of better eating habits among workers. It functions mainly through the regional nutrition representatives and the State and local nutrition committees. A representative has been assigned to each region to assist with the industrial aspects of the program. Although the representatives for nutrition in industry are primarily concerned with the in-plant phases of the individual feeding problem, they are expected to make reports and recommendations to the regional offices on the community and home phases as well. The regional offices are responsible for seeing that such reports are brought to the attention of the State and local nutrition committees and their subcommittees.

The industrial representatives act in an advisory capacity to the nutrition committees and their subcommittees on methods of procedure on in-plant feeding problems. They are expected to make whatever direct plant contacts they deem desirable, provided that the requests for contact have come from the industries concerned and the visits to the communities have been cleared through the respective regional representatives and State nutrition committees. As the in-plant feeding problem properly belongs in the field of industrial hygiene, the State industrial hygiene officers are kept informed of the progress of nutrition programs within industrial plants in their States.

They are also informed of all contemplated visits to plants; and, where they desire it, the in-plant phase of the industrial nutrition work may be implemented through their offices. All findings and recommendations on in-plant feeding problems made, as the result of such contacts, are made in writing to the plant executives. Copies are not furnished the State and local nutrition committees except with express consent of the responsible plant executives. A copy of each report is filed in the regional office and another is sent to the Washington office.

The regional representative for Nutrition in Industry can be of assistance to industrial plants in many ways, including:

1. Advice to plant executives on methods for improving in-plant feeding conditions and on the most effective use of available equipment, based upon confidential plant surveys.
2. Advice on setting up effective nutrition education programs for the plant employees.
3. Providing information on the source and nature of nutrition posters, pamphlets, flyers, news releases, programs, etc.
4. Suggestions as to cafeteria and canteen menus which provide for the employees' nutritional needs and are compatible with food shortages and the rationing program.
5. Advise the plant executives as to organizations, individuals, and community groups which are in a position to assist in nutrition programs for the workers.
6. Help bring about closer working relationships between plant management and the nutrition committees.

The industrial representative can also be of assistance to the regional office in the organization of subcommittees, on Nutrition in Industry, of the nutrition committees and in the planning and execution of their programs.

All of the State nutrition committees have been advised to form subcommittees on nutrition in industry. The membership of the subcommittees on nutrition in industry quite generally includes representatives from the following groups:

Health departments and their industrial hygiene divisions.
Industry and industrial organizations.
Labor.
Labor departments.
Industrial physicians.
Medical societies.
Food producers and merchants.
Caterers.
Service clubs.
Red Cross.
Utilities.
Newspapers and radio.
Nutrition committees.

Both the regional nutrition representatives and the industrial representatives of the Nutrition and Food Conservation Branch are ex officio members of the nutrition committees and their subcommittees on nutrition in industry.

The activities of the subcommittees on Nutrition in Industry might include:

1. Assisting the nutrition committee in planning a publicity program through newspapers, magazines, plant publications, and radio.

(*a*) The initial publicity should emphasize the cooperation of the community with the National Nutrition Program, properly emphasizing the industrial phase.

(*b*) Subsequent publicity should emphasize local participation; e. g., quotations from members of the subcommittee and from leading citizens; pictures and stories of cooperating housewives, plants, restaurants and boarding-house keepers; daily suggestions on lunch box menus, etc.; and publicizing of pledges of cooperation by plants or restaurants.

2. The local nutrition committee and the subcommittee on nutrition in industry should be organized to arrange for:

(*a*) A lunch-box program.

(*b*) Neighborhood nutrition meetings and forums for war workers' wives, mothers, boarding-house keepers, etc.

(*c*) Interviews with restaurant owners and managers to secure their cooperation in the industrial program.

(*d*) Interviews with proprietors and managers of food stores.

(*e*) The distribution of suitable posters and fliers and pledges of cooperation.

(*f*) A demonstration of an ideal emergency factory canteen which may be set up in cooperation with the local Red Cross or a local utility.

3. The Subcommittee on Nutrition in Industry may desire to determine which industrial concerns wish aid from the subcommittee in setting up their own nutrition programs. Such information might be obtained from the local utility company, the local health department, the local Chamber of Commerce, the Manufacturers' Association, or from the regional office of the Food Distribution Administration, which may have been in correspondence with some of the plants in the community or with their central offices.

(*a*) These plants should be contacted first, waiting for the pressure of the community campaign to result in requests for aid from other industries.

4. The Subcommittee can arrange conferences with the Manufacturers' Association, the Chamber of Commerce, industrial physicians, safety engineers, and organizations such as Rotarians, Kiwanis, Lions Club, and the Medical Society.

5. Both the Nutrition Committee and its subcommittee should undertake to review all industrial nutrition programs prepared by private organizations for use in the community. They should give careful consideration to means by which they can actively cooperate with those programs which show promise of effectiveness. The success of the National Nutrition Program depends to a considerable degree upon the use made of private resources.

In addition to the organization set up for the National Nutrition Program, the Nutrition in Industry Division of the Nutrition and Food Conservation Branch has an arrangement with the Industrial Hygiene Division of the United States Public Health Service and the Ordnance Branch of the United States Army whereby an inspection of food selection and meal preparation, feeding conditions, and requirements is included in industrial hygiene surveys of Army ordnance plants. A commissioned officer of the United States Public Health Service, assigned to the Nutrition in Industry Division, accompanies the Industrial Hygiene teams to make these nutrition surveys. Although they are conducted entirely independent of the regional offices, the regional nutritionists are kept informed of visits to ordnance plants within their regions.

Reports prepared on nutrition conditions in Army ordnance plants are transmitted through the Industrial Hygiene Division of the United States Public Health Service to the Army Ordnance headquarters in Chicago as integrant parts of the regular industrial hygiene reports, after they have been reviewed by the Technical Adviser on Nutrition in Industry.

The arrangements made between the Nutrition in Industry Division and the Industrial Hygiene Division of the United States Public Health Service do not preclude agreements between an individual ordnance plant and a regional representative of the Food Distribution Administration, or a nutrition committee, for nutrition work within that ordnance plant.

At present, navy yards and shipyards under control of the Maritime Commission are contacted only upon requests by individual yards. Such requests are handled through the regional offices.

Many industrial feeding problems arise from or are aggravated by difficulties in transportation, inadequate housing, poor sanitation, and inadequate community marketing and eating facilities. Meeting these problems involves cooperation of other governmental bodies in addition to the Food Distribution Administration. The regional nutrition representatives are responsible for bringing to the attention of the regional offices of interested governmental agencies such conditions as adversely affect the nutritional status of the worker.

The prestige and cooperation of existing labor organizations is desirable to make the nutrition message more acceptable to the workers. A National Labor Advisory Committee has been set up representing unions within the Congress of Industrial Organzations, the American Federation of Labor, their respective auxiliaries and the Railroad Brotherhood. The Nutrition in Industry Division is in constant touch with each representative regarding any matter within affiliated organizations.

Both the national Congress of Industrial Organizations and the American Federation of Labor have sent messages to all their State and city organizations urging them to cooperate with the nutrition committees. Each labor group sets up its own Labor Nutrition Committee, the chairman of which may function as a member of the city nutrition committee.

News and feature articles are provided regularly to the labor press. The American Federation of Labor has a feature service supplying about 450 union papers. The first 24 weekly articles, presenting nutrition problems through social and historical incidents, aroused so much interest that the American Federation of Labor has had them printed in pamphlet form for free distribution.

A special section, Labor and Food for War Work, set up in the WPB Labor Press Service, reaches 800 labor press editors weekly with material on nutrition in industry.

The Nutrition in Industry Division has close relations with the Association of Industrial Editors of employee publications. Twelve hundred industrial magazine editors and many other industrial plants are supplied a variety of items each month to be used in employee publications, and on bulletin boards. The News Service sends, in addition, weekly releases to editors of women's pages of newspapers. All releases are sent in response to written requests and are distributed by the Office of War Information. Biweekly releases to victory letters, to Victory and such Government publications as Consumers' Guide, Department of Agriculture; and Domestic Commerce, Department of Commerce are also provided. Also available is a dramatized radio program on "Nutrition in Industry."

A part of the National Nutrition Program consists of cooperating with food, restaurant, utility and similar industries which offer educational programs to industrial plants. The Nutrition and Food Conservation Branch is willing to review the material included in all such programs.

Through the Nation-wide organization set-up for the National Nutrition Program, it is possible for any industrial plant or community, no matter how large or small, to obtain advice on procedures to protect the health of industrial workers through good nutrition.

BASIC CONSIDERATIONS FOR AN "IN-PLANT" NUTRITION PROGRAM

The major causes of malnutrition in the United States can be classified into four groups: Poor food habits, failures in provision, economic factors, and metabolic stress. The Committee on Nutrition of Industrial Workers of the National Research Council has pointed out that conditions of unusual metabolic stress "such as illness, increased working hours, extremes of temperatures to which workers are frequently exposed, speed-up of work, insufficient rest, etc., which increase energy consumption, produce a proportionate increase in the body's nutritional requirements. There is the additional consideration that illness and other conditions of metabolic stress are often accompanied by a deterioration in the quantity and quality of the individual's food intake. The effects upon the individual of nutritional deficiencies acquired during such periods may be long standing and far reaching."

Obviously, efforts to improve the nutritional status of workers should be directed simultaneously along three lines: Education, provision and economy.

Education.

1. Form a nutrition committee within the plant, representing employees and management. Where safety, grievance, or employee health and welfare committees already exist, they can furnish the nucleus of the nutrition committees. This committee can be given the responsibility for the organization and execution of the nutrition program.
2. An "opening rally" might be arranged to launch the nutrition program, with a professional speaker to give a short talk on nutrition. Motion pictures on nutrition might be shown.
3. The plant's cafeteria or canteen system, through serving foods of good nutritional value in an attractive fashion, can be an extremely important educational influence.
4. Classes and demonstrations on nutrition can be conducted by the plant physician or dietitian, or through arrangements with the local nutrition committee or other community groups.
5. A dietitian, or an industrial nurse trained in nutrition, employed in the medical department and under the supervision of the plant physician, can be made available to the employees for dietary advice.
6. Nutrition information can be made a regular feature of plant publications.
7. Flyers can be used suggesting daily menus, describing food groups and alternates for rationed foods, or listing foods of good nutritional quality which are in season or on the market at reasonable prices. Such flyers can be kept timely and can be used as guides by the worker's family.

8. Pamphlets on nutrition can be distributed to the workers and their families.

9. Posters emphasizing the importance of good nutrition or creating an interest in good food habits can be placed about the plant, especially in the lunch rooms and where employees must pass or wait in line. Material which can be changed from time to time or which provokes a personal interest in the program is especially effective. The plant management might sponsor a poster contest among employees' children, or among the school children in the community.

10. Where periodic physical examinations are held, the addition of a few questions on diet to the medical history will serve to stimulate employee interest in nutrition, will have an educational effect and will enable the medical department to define the existing nutrition problem. The dietary history might take the following form:

Do you get at least 1 pint of milk daily?______________________________
If not, how much do you get?______________________________
Do you eat at least 4 eggs every week?______________________________
Do you eat either orange, orange juice, tomato, tomato juice, grapefruit, or grapefruit juice daily?______________________________
Do you get at least 1 serving of another fruit, either canned, dried, or fresh daily?______________________________
Do you eat at least 1 serving of another vegetable besides potato each day?______________________________
Do you eat either a green leafy vegetable or a yellow vegetable each day?______________________________
Do you eat raw cabbage or salad greens daily?______________________________
Do you eat at least 1 serving of lean meat, fish, poultry or cheese each day?______________________________
How often do you eat any kind of liver?______________________________
How many servings of dark whole grain breads and cereals do you get each day?______________________________
How many servings of enriched white bread and fortified cereals do you get each day?______________________________
Do you regularly use butter or margarine on your bread?______________________________
If you use margarine, is it fortified with vitamin A?______________________________

In the space below, fill in 3 actual meals eaten, naming the *kind* of food as whole wheat bread, or white, etc.

Breakfast	Lunch	Dinner

Provision and economy.

1. The plant food facilities should be surveyed and evaluated. If it is impossible or impractical to have a plant cafeteria, mobile or stationary canteens or box-lunches should be considered.

2. Each meal served within the plant should be designed to furnish at least one-third of the worker's daily dietary requirements. Employing a well-trained dietitian to manage the cafeteria would serve at the same time to increase the nutritional value of the meals and decrease the overhead. Small plants in a community might jointly employ one nutritionist to supervise the quality of the meals served and the marketing for each of them. In other instances, small plants may call upon the local nutrition committees for advice.

3. Ideally all cafeterias, canteens, refreshment stands, etc., should be under plant management and run on a nonprofit, nonloss basis. A cafeteria should not be a means of obtaining funds for employee functions or benefits or for any purpose other than improving the food service and the quality of the meals. It is probable that in some instances a concessionaire may be better equipped to efficiently operate the cafeteria than the plant management. The plant management, however, should never divorce itself from responsibility for the quality of the meals served and the cost of the meals to the employees.

4. Intelligent marketing serves to keep down costs. Such marketing requires an understanding of the nutritional values of different foods, in addition to a knowledge of where and when to buy.

5. Foods of relatively low nutritional value, e. g., candy, sugar, soft drinks, and highly milled nonenriched cereal products, should be replaced, insofar as feasible, by foods of greater nutritional value.

6. The Food and Nutrition Board of the National Research Council has recommended the enrichment of white bread and flour, the fortification of margarine with vitamin A, and the general use of iodized table salt. On January 18, 1943, a Government order, making it mandatory to enrich all white bread, went into effect. Plant management should make certain that all such products, served within the plant, are enriched or fortified as recommended by the Food and Nutrition Board.

SOME SPECIAL CONSIDERATIONS IN INDUSTRIAL NUTRITION

Length of mid-shift meal periods.—Various surveys have shown that the time taken by workers for the actual consumption of their lunches ranges from 10 to 15 minutes. Those workers who eat substantial lunches quite generally take 15 minutes. The length of the mid-shift meal period should in every instance provide for a minimum time of 15 minutes for the actual consumption of food. Varying additional allowances should be made for the time needed for toilet preparations; changing clothes; going to and from the cafeteria, lunch room or canteen and for the time spent by the employee in the food-service line. In large plants, the over-all length of the mid-shift meal period can be kept to a minimum by a decentralization of eating facilities, through the use of mobile kitchens and canteens, stationary canteens, strategically located lunch rooms, etc.

In the great majority of cases, 30 minutes can be accepted as the minimum to which it would be desirable to reduce the length of the mid-shift meal period. Longer periods frequently may be found necessary.

Employees should be discouraged from working through their lunch periods, without eating. This practice tends to impair health and decrease efficiency, if continued over any length of time.

"Between meal" rest periods and refreshments.—Ten-minute rest periods, with an apportunity to obtain refreshments, are recommended during the middle of the first and second half of each shift, as a means of combating fatigue, decreasing accidents and lost time, and sustaining production.

The foods offered during the rest periods must be such that would permit of ready service and ingestion, with a minimum amount of preliminary preparation on the part of the worker. They should make a definite contribution to the worker's diet. Milk, citrus fruit juices, tomato juice, fruits, and sandwiches, made with enriched or whole grain breads and substantial fillings, are satisfactory foods for "between meal" lunches.

Sugar as an "energy food".—No special case can be made for sugar as a source of energy, quick or otherwise, for the industrial worker. Mixed foods are more desirable than pure carbohydrates because of their more prolonged effect and the contribution of essential food factors which they make to the worker's diet.

Problems arising from shift work.—Workers on the evening and night shifts are particularly apt to suffer from malnutrition. Their living and eating conditions are generally worse than those of day shift workers. Plant cafeterias and canteens should be open to serve substantial meals to all shifts at all meal periods. If the plant provides no eating facilities, it may be possible to arrange with a neighborhood restaurant of satisfactory standards to provide 24-hour meal service.

Frequent shift changes disrupt home life and living and eating routines. Shifts should not be rotated more often than every 2 or 3 months.

Special considerations for women workers.—Dietary surveys of industrial workers generally agree in finding that the eating habits of the women employees are worse than those of the men. Plants employing large numbers of women should be particularly careful to make adequate provision for their nutritional requirements. An active nutrition education program is also indicated.

In general, women workers who also have domestic duties should not be employed on the night shift.

As the loss of regular sleep is more serious for young people who have not reached their full growth, young girls should not be placed on the night shift.

Nutrition as a factor in the prevention of heat reactions.—Ill effects in men working under conditions of high temperature are least often seen among those who are in good physicial condition, who are acclimatized to work in the heat, who eat a good diet, who replace their water loss hour by hour and their salt loss day by day.

Water should be available at all times. Salt must be taken in adequate amounts each day. Preferably, however, it should not be taken during the work period, but should be taken with meals and during rest periods, and especially after the conclusion of the day's work.

The water soluble vitamins thiamin and ascorbic acid may be lost in the sweat but the possible severity of such losses has not as yet been determined, and no recommendations are possible.

Heat stroke is a critical emergency, the only effective treatment for which is to lower the body temperature by means of ice baths, ice enemas and, when possible, cool drinks. It is not improved by giving salt, unless the patient has cramps.

Heat exhaustion is a somewhat less critical emergency, best treated by lying quietly in a cool place. Cool drinks are given as desired by the patient.

Heat cramps are incapacitating and painful but not dangerous to life for many hours, if at all. The only effective treatment is replacement of sodium chloride and water which have been lost by the body. Glucose, either alone or in addition to saline solutions, is of no therapeutic or prophylactic value.

Nutrition as a factor in the prevention of reactions to toxic substances.—Foulger (Foulger, J. H., Medical Clinics of North America, 26: 1145, 1942) has studied the effects of the administration of 100 mg. daily of vitamin C to individuals working in the presence of trinitrotoluol and has found indications of a beneficial effect. He has also found an increase in the proportion of conjugated to free beta-naphthylamine excreted in the urine following the administration of vitamin C and vitamin B_1 to human subjects. Confirmatory studies are at present not available. It is recommended that the plant physician consider the administration of vitamins, to prevent toxic reactions in the chemical industries, to be in the experimental stage.

Many plant physicians are in a position to conduct well-controlled studies and add materially to the scanty fund of knowledge on this subject.

The mass of evidence indicates that vitamin C is not an effective prophylactic agent for lead poisoning and has little merit as a therapeutic agent in this condition. (Evans, Norwood, Kehoe, and Machle: Journal American Medical Association, 121:501 (February 13) 1943).

The value of milk in the prophylaxis of lead poisoning is generally accepted but there is no justification for its reputation as an effective prophylactic for toxic reactions in the manufacture and handling of trinitrotoluol, dinitrotoluol, nitroglycerine, etc.

Prevention of the common cold.—Neither vitamin A nor any other single vitamin has been proven to materially decrease the incidence of the common cold among significantly large groups of the American population.

Polyvitamin preparations in industry.—Good nutrition must be based upon a good diet of natural foodstuffs. It is not possible to assure industrial workers, indiscriminately, that they can obtain optimum nutritional health through the ingestion of a certain number of vitamin capsules regularly. Under certain conditions it may not be advisable to depend upon the available supply of "natural foodstuffs" for all of the essential food factors.

Where there exists an excessive loss of salts or vitamins from the body, where energy output and therefore metabolic requirements for these substances are extraordinarily high or where therapeutic amounts are indicated, the need for the administration of particular vitamins or salts in quantities greater than can be obtained in available foods may be present. Such needs should be defined by the plant physician.

Again, where the available supply of foodstuffs cannot be depended upon to satisfy even the average requirements for certain essential food factors, either because of deficiencies in supply or due to irremediable losses in the storage, transportation, or preparation of foodstuffs, indications for the use of food concentrates or synthetic vitamins may be present. Such conditions should be defined by a qualified dietitian or by the plant physician.

In the prophylaxis of vitamin deficiency diseases, foods naturally rich in vitamins, such as yeast, liver, certain fish liver oils, and wheat germ, are to be considered preferable to the synthetic vitamins. Wherever possible such foods should also be incorporated in the therapy of nutritional diseases along with sufficient amounts of the indicated synthetic vitamins.

SUGGESTIONS ON "IN-PLANT" FEEDING

A pamphlet of master menus for all types of in-plant feeding facilities will shortly be made available by the Nutrition and Food Conservation Branch, Food Distribution Administration. The purpose of this chapter is merely to present a few suggestions indicating types of meals that are nutritionally satisfactory and practical for mass feeding services.

Each meal served within the plant should supply the worker with at least one-third of his daily dietary requirements.

A la carte menus are wasteful of food, serve to increase the cost of food to the employees and increase the serving time. They do not encourage the employee to select a nutritionally complete lunch. Workers will complain more if their meals lack sufficient variety from day to day than they will over a limited choice at any one meal.

The mid-shift meal service should offer the worker a limited choice of nutritionally satisfactory lunches, with as much variety, from day to day, as possible.

A cold lunch can be as nutritionally adequate as a hot lunch.

Special lunches, emphasizing the use of alternate foods, can be offered at slightly lower than prevailing prices to increase their acceptability. At least one such lunch should be offered at every mid-shift meal period.

Foods used as alternates for rationed items should be true alternates, and not substitutes. For example, cheese, fish, poultry, the variety meats, and certain dried beans and legumes can be considered truly to be alternates; whereas spaghetti and macaroni cannot be so considered.

Milk and other protective foods might be offered at or below cost to encourage their consumption in preference to nonprotective foods such as pastry, soft drinks, etc.

All white bread and white flour used should be of the enriched variety.

All margarine should be fortified with vitamin A.

Table salt should be iodized.

The following are a few examples of menus which are nutritionally satisfactory and acceptable to industrial workers.

COLD LUNCHES

One feeding which would fulfill one-third day's food requirement, National Research Council standards, for a moderately active man:

Menu No. 1

Ham Sandwich[1]—1.
American Cheese and Lettuce Sandwich[2]—1.
Milk—8 oz.
Orange Juice—4 oz.

Menu No. 2

Cheese Sandwich[2]—1.
Chopped Dried Beef and Egg Sandwich[2]—1.
Milk—8 oz.
Grapefruit Juice—4 oz.

Menu No. 3

Chopped Egg, Spinach and Cottage Cheese Sandwich[2]—1.
Sliced Tomato and Lettuce Sandwich[2]—1.
Milk—8 oz.
Dried Prunes—8–10.

Menu No. 4

Chopped Liver Sandwich—1.
Peanut Butter Sandwich—1.
Milk—8 oz.
Tomato Juice—6 oz.

Menu No. 5

Ham and Egg Sandiches[2]—2.
Milk—8 oz.
Tomato Juice—6 oz.

Menu No. 6

Sardine and Onion Sandwich—1.
Cheese Sandwich—1.
Milk—8 oz.
Tomato Juice—6 oz.
Roasted Peanuts—3 tablespoons.

The following foods, when added to each of the above menus as a supplementary feeding, will furnish one-half of the day's food requirement, National Research Council standards, for a moderately active man:

Milk—8 oz.
Bread—2 slices (enriched).
Egg—1, or the sandwich filling in the menu.
Butter or Fortified Margarine—2 teaspoons.
Tomato Juice—6 oz.

The full menus as suggested, given twice daily, would supply two-thirds day's food requirements, National Research Council standards, for a moderately active man.

SUGGESTIONS FOR HOT LUNCHES

Menu No. 1

Cream Soup, or Tomato or Grapefruit Juice
Baked Ham, Sweet Potato, Cole Slaw
or—Barbecued Chicken, Steamed Brown Rice, Boiled Carrots
Whole Wheat or Enriched Bread and Butter or Fortified Margarine
Butterscotch Pudding
Coffee, Tea, or Milk

Menu No. 2

Tomato or Grapefruit Juice
Chinese Omelet, Tomato Sauce, Green or Yellow Vegetable
Whole Wheat or Enriched Bread and Butter or Fortified Margarine
Custard or Custard Pie
Coffee, Tea, or Milk

---

[1] Enriched white bread or whole wheat bread and butter or fortified margarine is used in making all sandwiches.

[2] Mayonnaise or other salad dressing can be used as desired.

MENU No. 3

Orange, Tomato or Grapefruit Juice
Pot Roast of Beef, Baked Potato, Peas
***or*—Stuffed Green Peppers, Scalloped Tomatoes**
Whole Wheat or Enriched Bread and Butter or Fortified Margarine
Peach Cobbler
Milk

MENU No. 4

Grapefruit Juice
Braised Pork Chop, Creamed Potatoes, Green Beans
***or*—Lamb Stew with Vegetables**
Whole Wheat or Enriched Bread and Butter or Fortified Margarine
Tapioca Cream Pudding
Coffee, Tea, or Milk

MENU No. 5

Cream of Tomato Soup
Boiled Tongue, Au Gratin Potato, Spinach
***or*—Meat Loaf, Parsley Potato, Cole Slaw, or Molded Fruit Salad**
Whole Wheat or Enriched Bread and Butter or Fortified Margarine
Whole Raw Fruit
Coffee, Tea, or Milk

MENU No. 6

Tomato Juice
Baked Trout, Baked Potato, Carrots and Peas
***or*—Beef and Kidney Pie with Vegetables**
Whole Wheat or Enriched Bread and Butter or Fortified Margarine
Bread Pudding
Milk

MENU No. 7

Cream of Potato Soup
Chili Con Carne, Boiled Potato, Cole Slaw
***or*—Frankfurters, Sauerkraut, Potato Salad**
Whole Wheat or Enriched Bread and Butter or Fortified Margarine
Fruit Pudding
Coffee, Tea, or Milk

THE CONSERVATION OF ESSENTIAL FOOD FACTORS IN THE PREPARATION OF FOODS FOR HUMAN CONSUMPTION

Some losses in food value occur in practically all foods following harvesting. Further losses occur in the storage, processing, cooking and serving of foods. In relation to some factors, the losses may be enormous in the preparation of foods for mass feeding. Much of this loss is unnecessary and can be avoided by observing the few simple rules given below:

FRUIT AND VEGETABLE COOKERY

To conserve vitamins and minerals:

1. **Preparation.**—Use fresh vegetables and fruits as soon as possible after delivery. Handle very carefully for bruising causes rapid losses of vitamins. Keep vegetables and fruits crisp and cool until time to cook them. Shred or chop vegetables and fruits just before they are to be served or cooked.
2. ***Cooking.***—Add vegetables or fruits to rapidly boiling water. Cook quickly and in as little water as possible. Do not add soda to vegetables or fruits to preserve their color because it destroys the vitamins. Cook until just done with some of the original crispness left. Do not stir or expose to air and light anymore than absolutely necessary. Do not let vegetables or fruits stand in water. Standing destroys vitamins. Use vegetable cooking water in gravies, soups or sauces. Bring precooked canned fruits and vegetables quickly to a boil but do not continue boiling. Add frozen vegetables and fruits directly to boiling water. Do not defrost preliminary to cooking.
3. ***Serving.***—Serve vegetables and fruits as soon as possible after they are cooked or prepared for service.

MEAT COOKERY

Short methods of cooking such as sauteing or broiling are less destructive of vitamins than slower methods. Roasting at a low temperature is less destructive than at a high temperature. As with other foods, meats should be served as soon as possible after cooking. Standing in a warmer or on a steam table is accompanied by vitamin losses.

IS THERE A NUTRITION PROBLEM IN THE UNITED STATES?

Prior to the onset of the present war, many millions of American people were not eating the minimum amounts of all the essential food factors needed to keep them in good health. For example, a dietary survey of 1.169 school children in Worchester County, Md. (Willard: American Journal of Public Health, 32:996, 1942), revealed that only 41 percent of the children had two or more cups of milk daily; only 19 percent had adequate vegetables other than potato; only 20 percent of the diets were adequate in fruits; 41 percent in cereal or whole grain; but 97 percent of the children received sufficient meat. All five factors were adequate in only 7.6 percent of the diets; 23 percent were "totally deficient" in one factor; 35 percent in two; 27 percent in three; and 7.5 percent in four.

This section of the Eastern Shore area of Maryland is favored with diversified crops and ample food resources. "There is no reason why there should be a nutrition problem except that many of the 14,000 white and 7,000 colored inhabitants are poor and ignorant, and have large families." In some areas of the Nation, such as the "money crop" section of the South, insufficient food crops and resources have been extremely important causes of malnutrition, but, throughout the Nation, the prime responsible factors have been poverty and ignorance—factors which do not always go hand in hand.

An indication of the role played by food habits, ignorance, and superstition is given by the observations of Stiebeling and Phipard (U. S. Department of Agriculture, Circular No. 507, 1939). These investigators studied the diets of families of employed wage earners in cities, during the period December 1934–February 1937. They found that only 1 percent of white families with a per capita food expenditure of $1.25 to $1.87 per week obtained a good diet, with 82 percent receiving diets definitely poor in one or more nutrients. Nine percent of white families spending between $2.50 to $3.12 per capita per week for food received good and 53 percent poor diets. With food expenditures of $3.75 to $4.37 per person per week, it should not have been difficult to purchase a good diet in 1935. Yet, only 23 percent of such families actually had good diets while 26 percent had poor diets. Obviously the quality of the food selected by families is not merely a matter of the per capita expenditure for food. At every expenditure level above a certain minimum, some families succeed in obtaining good or fair diets while others fare poorly.

Milam (Nutrition Reviews, 1: 72, 1943) found dietary deficiency in ascorbic acid, vitamin A, thiamin, riboflavin, calcium, iron, and protein to be prevalent in a North Carolina community of about 400 inhabitants.

In a dietary survey of 1,103 aircraft workers in southern California, Wiehl (Milbank Memorial Fund Quarterly, 20: 329, 1942), found that 56 percent of the diets were poor as regards the consumption of green or yellow vegetables; 49 percent were deficient in citrus fruit or tomatoes; 33 percent were poor in milk; 23 percent in eggs, while only 1 percent consumed meat as infrequently as twice a week. Only 2 percent of the diets contained satisfactory amounts of each of the five food groups, while 87 percent were definitely below the amounts recommended by the Food and Nutrition Board of the National Research Council. For most of the men, an increased consumption of milk and of citrus fruits, tomatoes, and certain green vegetables would correct the major deficiencies of riboflavin, calcium, and ascorbic acid and raise the intake of most other nutrients. It is of interest that 85 percent of the diets furnished the recommended amounts or more of protein.

The young men had somewhat better diets than the older men. Men under 25 years of age drank more milk and ate more citrus fruit than those 25 years or older, but had a similar consumption of green and yellow vegetables and eggs.

The report of the Committee on Nutrition of Industrial Workers of the National Research Council (National Research Council, Reprint and Circular Series No. 110 (April) 1942), cites a number of surveys of lunches obtained by workers in plant cafeterias which agree in finding that not more than one-half of the industrial workers observed selected good lunches from the cafeteria line, even when a good choice was possible.

Practically all dietary studies of women workers agree that women employees generally consume poorer diets than men employees. This is rapidly becoming a factor of major importance as the number of women in industry increases. Dr. John H. Foulger (address before the Engineering Society of Detroit, January 15, 1943) has cited the instances of an English plant manager, in a chemical industry, who found that an apparent sex difference in the incidence of gastric complaints, with a much higher incidence among the women employees, disappeared following the improvement of the diets of the women.

If dietary studies can be taken as an indication of nutritional status, an appreciable incidence of malnutrition existed among all classes of the population and in all sections of the country prior to our entrance into the war in December 1941.

Obviously, there is need for an intensive educational program. However, an educational program, geared to reach only the worker and his family, cannot be effective. Good foods, properly prepared and served, must be made available to the worker and he must be given the opportunity and time to take advantage of them.

There is evidence that many of the usual practices associated with the mass preparation and service of foods result in serious losses in food value. Assays of the vitamin B_1, riboflavin and vitamin C content of two meals taken off the counter at the regular meal period in a large industrial cafeteria (Goodhart, R.: J. A. M. A., 121: 93 (January 9) 1943) revealed that, in these instances, no reliance could be placed on the foods cooked in the cafeteria kitchen for supplies of vitamin B_1 or vitamin C. Eighty-seven percent of the vitamin B_1 content of one meal was "provided by the meat, potato and beans, a condition associated with 92 percent loss of thiamin in the preparation of the meal. The meat, potatoes, and carrots provided 40 percent of the thiamin content of the second meal, which showed a loss of 52 percent of the total thiamin content in preparation." There was an 82 percent loss of vitamin C in the first meal which contained no citrus fruit or tomato juice or salad. The final vitamin C content of the second meal was practically all accounted for by the tomato juice present.

Dr. Robert S. Harris of Massachusetts Institute of Technology reported at the fall (1942) meeting of the American Dietetic Association, that whether food is obtained from an expensive restaurant, cafeteria, or lower class restaurant may bear no relation to its nutritive quality, since the vitamin destruction may be equally severe in the foods served in each place. Vegetables prepared in one of the restaurants at the institute showed considerable losses of vitamins B_1 and C in cooking. When allowed to remain on the steam table after cooking, they showed a much greater loss. In some cases the total losses exceeded 95 percent of the original vitamin content.

Vitamins B_1 and C play essential roles in human nutrition. Williams, et al. (Williams, R. D., Mason, H. L., Smith, B. F., and Wilder, R. M., Archives Int. Med. 69: 721, 1942) found that adults maintained on thiamin deficient diets developed fatigue, lassitude, and loss of appetite; the more active the individual, the sooner did severe symptoms develop. Depressed mental states, muscle soreness, and backaches also developed and the capacity for muscular work also progressively decreased. Restoration of vitamin B_1 to the diet sooner or later brought an end to these signs and symptoms. It was also shown by these workers that a diet containing sufficient vitamin B_1 to prevent the development of obvious deficiency disease is not necessarily adequate for the best nutritional state, as larger amounts increased the alertness and attentiveness of experimental subjects and led to increased working capacity.

Similarly, the work of Johnson, et al. (Johnson, R. E., Darling, R. C., Forbes, W. H., Brouha, L., Egana, E., and Graybiel, A., Jour. of Nutrition, 24: 585, 1942) emphasizes the need for an adequate daily intake of the vitamin B complex if physical fitness is to be maintained. These workers subjected men, on a diet deficient in parts of the vitamin B complex, to hard daily physical work. At the end of 1 week all subjects exhibited symptoms of muscle and joint pains, lack of well being, poor appetite, and constipation. The subjects improved when vitamin B_1 was added to the diet, while the addition of dried brewers yeast was followed by the disappearance of all symptoms and a more rapid and complete recovery of the usual level of fitness.

If a great proportion of the population did not obtain proper diets when food supplies were relatively plentiful, it is hardly reasonable to expect them to do so in the presence of food shortages, rationing and rising prices, unless the wartime civilian food program is properly geared with an effective Nation-wide nutrition program.

SOURCES OF INFORMATION AND MATERIAL

The following list of posters, pamphlets, films and radio materials is presented as a suggestion and are available as indicated by references. It is not intended as a complete list of nutrition educational material.

POSTERS

Government:
- Nutrition and Food Conservation Branch, Food Distribution Administration, Washington, D. C:
  - *U. S. Needs Us Strong—symbol.
  - *U. S. Needs Us Strong—food rules.
- U. S. Public Health Service, Industrial Hygiene Division, Bethseda, Md.:
  - * "Big Joe" series of 9, 9 x 12.
- Bureau of Home Economics, U. S. Department of Agriculture, Washington, D. C.:
  - xFlight Food Waste in the House—series of 10, 14 x 20, 25 cents set.
  - xNutrition Charts, set of 11, 15 x 23, 50 cents per set. (Order from Superintendent of Documents, U. S. Government Printing Office, Do not send stamps.)

Other sources:
- #Servel, Inc., Evansville, Ind.:
  - xNutrition in Industry program. "Eat to Beat the Devil," 18 x 28, (Form SPN-298).
  - xVictory Lunch Promotion Poster, 21½ x 17½ (Form SPN-302 A, B, C, D,).
  - xEducational. Food Promotion Series, 4, 21½ x 17½ (Form SPN-302 A, B, C, D).
  - xJumbo Food Rules Chart, 40 x 30 (Form SPN-293).
  - xVictory Lunch Blackboard Display, 16½ x 26 (Form SPN-303B).
- Westinghouse Electric & Manufacturing Co., Mansfield, Ohio:
  - xHealth for Victory, set of 2, 17 x 22.
- National Dairy Council, 111 N. Canal St., Chicago, Ill.:
  - *Professional Teaching Aids.
- Evaporated Milk Association, 307 N. Michigan Ave., Chicago, Ill.:
  - *For the Calcium You Need, 25 x 38.
- #National Livestock & Meat Board, 407 S. Dearborn St., Chicago, Ill.:
  - xEat the Right Food Daily, series of 12, 36 x 12.
  - xFood Value Charts, 36 x 12.
- Institute of Life Insurance, 60 East 42d Street, New York:
  - *"Just by Keeping Well You Can Help Win the War," 13 x 20.
- Quaker Oats Nutrition Department, Chicago, Ill.:
  - *Oatmeal, 18 x 24.
- Standard Brands, 595 Madison Avenue, New York:
  - *Enriched Bread, 22 x 21.
- General Mills, Chamber of Commerce Building, Minneapolis, Minn.:
  - *Enriched Bread, 18 x 12.
- Boyd-Knell, Standard Milling Co., 500 N. Sacramento Blvd., Chicago, Ill.:
  - *Enriched Bread, 18 x 12.
- #National Association of Food Chains, 726 Jackson Place, Washington, D. C.:
  - *Theme Poster, food rules, 20 x 30.
  - *Bread and Cereals, 22 x 15.
- Philadelphia Child Health Society, 311 S. Juniper St., Philadelphia, Pa.:
  - xVegetables for Victory, 8 charts in color, 50 cents per set.

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*Available for free distribution.
xObtainable by purchase only.
#Reviewed by Nutrition Division, Office of Defense Health and Welfare Services.

PAMPHLETS

Government:

Nutrition and Food Conservation Branch, Food Distribution Administration:

†Handbook for Food Demonstrations in Wartime.
†Eat the Right Food to Help Keep You Fit.
†Providing Leadership in Nutrition Education Through Refresher Courses.
†The Food We Live By.
†When You Eat Out.
†Nutrition Week.
†Food Fads, Facts and Fancies, by Dr. Helen S. Mitchell.
†Food Rules, pocket-size flyer.

Office of Information, U. S. Department of Agriculture:

‡Are We Well Fed? Hazel Stiebeling, Miscellaneous Publications No. 430, 15 cents.
‡Green Vegetables in Low-Cost Meals, $1 per 100.
‡Meat for Thrifty Meals, Farmers' Bulletin No. 1908, 10 cents.
‡Milk for the Family, Farmers' Bulletin No. 1705, 5 cents.
‡99 Ways to Share the Meat, $1 per 100.
‡Potatoes in Low-Cost Meals, $1 per 100.
‡Poultry Cooking, Farmers' Bulletin No. 1988, 10 cents.
‡Root Vegetables in Low-Cost Meals, $1 per 100.
‡Soybeans for the Table, Leaflet No. 166, 5 cents.
‡Vitamins From Farm to You, $2 per 100.
‡Community Food Preservation Centers, Miscellaneous Publications, 10 cents.
‡Home Canning of Fruits, Vegetables and Meats, Farmers' Bulletin 1762, 10 cents.
‡Home Storage of Vegetables, Farmers' Bulletin 879, 5 cents.
‡Human Nutrition—Reprint from "Food and Life" U. S. D. A. Year Book, 40 cents.

Bureau of Plant Industry, U. S. Department of Agriculture:

Victory Gardens, Miscellaneous Publications 483, 5 cents.

Children's Bureau, U. S. Department of Labor:

‡Food for Young Children in Group Care—Bureau Publication 285, 10 cents.
‡The Road to Good Nutrition, Lydia J. Roberts—Bureau Publication 270, 15 cents.

U. S. Office of Education, Federal Security Agency:

†School Services for Children of Working Mothers (School Children and the War Series, Leaflet No. 1).
†Food Time—A Good Time at School (Aid to Day Care Committees—School Children and the War Series Leaflet No. 4).

U. S. Public Heath Service, Federal Security Agency:

‡What Every Person Should Know About Milk, Supplement to Public Health Reports No. 150, 5 cents.
‡Industrial Health Activities by State Agencies, Public Health Reports, 5 cents.
†Workers' Health Service.

Food Distribution Administration, Washington, D. C., and regional offices:

†Consumer's Guide.

From other sources:

National Research Council, 2101 Constitution Ave., Washington, D. C.:

*The Food and Nutrition of Industrial Workers in Wartime.
*Recommended Dietary Allowances.
*The Nation's Protein Supply.

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*Available for free distribution.
†Copies distributed free upon request to agency at Washington, D. C.
‡Obtainable by purchase, if more than one copy is desired. Obtain from Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. (Do not send stamps.)
xObtainable by purchase only.

Servel, Inc., Evansville, Ind.:
  xSeries, Home Volunteer's Nutrition Guide and Meal Planner.
  x"Eat to Beat the Devil," booklet.
  xNutrition in Industry Plan.
Westinghouse Electric & Manufacturing Co., Mansfield, Ohio:
  xHealth for Victory—A Nutrition Program for Industry at War.
  xABC's of Eating for Health.
  xHealth for Victory Club Monthly Meal Planning Guide.
Public Health Committee of the Paper Cup & Container Institute, 1790 Broadway, New York, N. Y.:
  *Revolution in Bridgeport.
General Electric Company, Bridgeport, Conn.:
  *Pack a Lunch That Packs a Punch.
  *How to Get the Most Out of the Food You Buy.
Union Label Trades American Federation of Labor, 901 Massachusetts Ave., Washington, D. C.:
  *Nutrition and Labor, Superstitions and Science in Our Daily Food, by Dr. Mark Graubard.
The American National Red Cross, Washington, D. C.:
  xFood and Nutrition, nutrition course, 25 cents.
  *American Red Cross in the Movement for Better Nutrition.
  *Budget Recipes, No. ARC 762.
National Industrial Conference Board, Inc., 247 Park Ave., New York, N. Y.:
  xIndustrial Lunchrooms.
Metropolitan Life Insurance Company, Policyholders' Service Bureau, New York, N. Y.:
  *Luncheon for Employees.
Institute of Life Insurance, 60 East 42d St., New York, N. Y.:
  *5 Simple Health Rules.
Yale University Press:
  xDiet and Physical Efficiency, by Haggard and Greenberg.
Cornell University, Ithaca, N. Y.:
  xMeals for Many, Bulletin for Homemakers, No. 477.
Princeton University, Princeton, N. J., Industrial Relations Section, Department of Economics:
  xOptimum Hours of Work in War Production.
Stephen Daye Press, Brattleboro, Vt.:
  xEat to Win, by Ernestine Perry.
H. J. Heinz Co., Research Department, Pittsburgh, Pa.:
  *If He Works by Night.
  *Nutritional charts for medical and other specialists.
National Dairy Council, 111 N. Canal St., Chicago, Ill.:
  xLunchtime on the Home Front.
  xA Guide to Good Eating.
National Association of Manufacturers, 14 W. 49th St., New York, N. Y.:
  xFood, Work and War, by Dr. Victor G. Heiser, Medical Consultant.
  xIndustrial Health Practices.
Council on Foods and Nutrition, American Medical Association, New York, N. Y.:
  xSome Nutritional Aspects of Sugar, Candy, and Sweetened Carbonated Beverages.
American Dietetic Association, 185 N. Wabash Ave., Chicago, Ill.:
  *List of publications and reprints.
  xBibliography of normal nutrition.
  xBibliographies on varied dietary subjects.
Public Affairs Committee, 30 Rockefeller Plaza, New York, N. Y.:
  xVitamins for Health, Borsook & Huse, No. 69.
Swift & Co., Department A., Chicago, Ill.:
  *Eat Right to Work and Win.
  xA Handbook of Meat Cookery.
Prudential Insurance Co. of America, Newark, N. J., and local offices:
  *Food After Forty, by Mary Schwartz Rose.
  *Food to Eat.

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*Available for free distribution.
xObtainable by purchase only.

Armour & Co., Chicago, Ill.:
  *Food for Freedom.
American Institute of Baking, 10 Rockefeller Plaza, New York, N. Y.:
  *Enriched Bread.
Evaporated Milk Association, 307 N. Michigan Ave., Chicago, Ill.:
  *Feeding a Family at Low Cost.
Florida Citrus Commission, Lakeland, Fla.
  *Keeping Fit in Wartime.
California Fruit Growers Exchange, Educational Department, Los Angeles, Calif.:
  *Bulletins on relative values of food.
National Peanut Council, Inc., 812 Citizens and S. National Bank Building, Atlanta, Ga.:
  *Peanuts and Their Food Values and Interesting Recipes.
Lily-Tulip Cup Corporation, 122 E. 42d St., New York, N. Y.:
  xNutrition for You.
  xVitamingo.
State Health Departments.
State Extension Services.
Food Distribution Administration Regional Offices.
Nutrition Committees, Defense Councils.

FILMS

Food—Weapon of Conquest, 2 reels, 16 mm., 35 mm., sound. (Importance of food in warfare.)
  Produced by Canadian Film Board, released in United States by United Artists, New York.
Fun in Food, 1 reel, 16 mm., sound, color. (Elementary information on food illustrated through allegories.)
  Produced and distributed by Films, Inc., 330 W. 42d St., New York.
Health for Defense, 1 reel, 16 mm., 35 mm., sound, color. (The role of food in good health.)
  Office for Emergency Management, Washington, D. C.
⊙Hidden Hunger, 2 reels, 35 mm., sound. (Symbolic presentation of importance of food production and good selection.)
  Distributed by Hidden Hunger, 401 Graybar Building, New York.
⊙Home of the Free, 1 reel, 16 mm., silent, color. (Good food selection in home and Army. Milk and dairy products stressed.)
  Produced and distributed by St. Louis Dairy Council, 4030 Chouteau Ave., St. Louis, Mo.
⊙Modest Miracle, 1 reel, 16 mm., 35 mm., sound. (Dramatization of discovery and importance of the "morale" vitamin B_1.)
  Produced and distributed by Standard Brands, Inc., 595 Madison Ave., New York.
The Negro Farmer, 3 reels, 16 mm., sound. (Suitable for Negro groups in suburban areas.)
  Produced and distributed by Tuskeegee Extension Service, Tuskegee Institute, Tuskegee, Ala.
⊙Proof of the Pudding, 1 reel, 16 mm., 35 mm., technicolor. (Presentation of some general suggestions of food needs for family.)
  Produced and distributed by the Metropolitan Life Insurance Co., New York.
V Men, 16 mm., 2 reels. (Role of vitamins, laboratory experiment showing losses of vitamins in cooking, and demonstration of proper preparation of vegetables.)
  Produced and distributed by Westinghouse Electric & Manufacturing Co., Mansfield, Ohio.
Vim, Vigor & Vitamins. (Sources of vitamins in foods for a day's menu.)
  Produced and distributed by Finer Films, 7936 Santa Monica Building, Los Angeles, Calif.
War Film List. (Including nutrition films.)
  Office of War Information, Bureau of Motion Pictures, Washington, D. C.

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*Available for free distribution.
xObtainable by purchase only.
⊙Reviewed and approved by the Nutrition Division, Office of Defense Health and Welfare Services, Washington, D. C.

British films available in United States of America:

- ⊙Eating at Work, 1 reel, 16 mm., 35 mm., sound. (Industrial nutrition.)
- ⊙Dig for Victory, 1 reel, 16 mm., 35 mm., sound. (Victory gardens.)
- ⊙Dinner at School, 1 reel, 16 mm., 35 mm., sound. (Children of wartime working mothers.)
- Men in Danger, 1 reel, 16 mm., 35 mm., sound. (Industrial health and accident prevention.)
- Miss T, 1 reel, 16 mm., 35 mm., sound. (Correct diets from childhood to wartime industry job.)
- Mrs. T and Her Cabbage Patch, 1 reel, 16 mm., 35 mm., sound. (Victory gardens.)
- No Accidents, 1 reel, 16 mm., 35 mm., sound. (Prevention of man-hour losses.)
- Wartime Factory, 1 reel, 16 mm., 35 mm., sound. (Importance of health of worker.)

British films may be secured for small service charge plus transportation, or may be purchased from the following depositories:

Central Depository—British Information Service, Film Division, 30 Rockefeller Plaza, New York, N. Y.

Regional Depositories—British Information Services, Film Division, 1336 New York Ave., Washington, D. C.
The Film Officer, British Information Services, 360 N. Michigan Ave., Chicago, Ill.
The Film Officer, British Information Services, 260 California St., San Francisco, Calif.
The Film Officer, British Consulate, 448 S. Hill St., Los Angeles, Calif.

NUTRITION NEWS SERVICE

Nutrition in Industry Division, National Nutrition News Service, Food Distribution Administration, Washington, D. C.:

- *Monthly releases for industrial plant magazines. (Sent upon request.)

War Production Board Labor Press, Office of War Information, Washington, D. C.:

- *Weekly releases for labor press. (Nutrition News included.)

RADIO

Nutrition in Industry Division, Food Distribution Administration, Washington, D. C.:

- *"Nutrition in Industry," 15-minute script, dramatization and interview. (Prepared in cooperation with Columbia Broadcasting Co.)
- *"Food for Freedom" 25-minute script. (Prepared in cooperation with Office of War Information and Blue Network.)
- *"Listen America" series of scripts, dramatization of lives of "Hunger Fighters" and other nutrition programs. (Prepared in cooperation with Women's National Emergency Committee and National Broadcasting Co.)

Food Distribution Administration, Radio Division, Washington, D. C., and regional offices:

- *"Food and the War" series, scripts. (Prepared in cooperation with Columbia Broadcasting Co.)
- *"Consumer Time" series, scripts. (Prepared in cooperation with National Broadcasting Co.)
- *"Food is a Weapon" script or transcription, 14½ minutes.
- *"A School Lunch for Every Child" script or transcription, 13 minutes.

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*Available for free distribution.
xObtainable by purchase only.
⊙ Reviewed and approved by the Nutrition Division, Office of Defense Health and Welfare Services, Washington, D.

ADDRESSES OF REGIONAL OFFICES OF THE FOOD DISTRIBUTION ADMINISTRATION

NORTHEAST REGION

150 Broadway,
New York, New York

(Includes: Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, Pennsylvania, New Jersey, Delaware, Maryland, West Virginia)

GREAT LAKES REGION

5 South Wabash Avenue,
Chicago, Illinois

(Includes: Wisconsin, Michigan, Illinois, Indiana, Ohio)

SOUTHERN REGION

Western Union Building,
Atlanta, Georgia

(Includes: Kentucky, Virginia, Tennessee, North Carolina, South Carolina, Mississippi, Alabama, Georgia, Florida)

SOUTHWEST REGION

425 Wilson Building,
Dallas, Texas

(Includes: Oklahoma, Texas, Arkansas, Louisiana)

MIDWEST REGION

The Old Colony Building,
Des Moines, Iowa

(Includes: North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa, Missouri)

ROCKY MOUNTAIN REGION

1536 Welton Street,
Denver, Colorado

(Includes: Montana, Idaho, Wyoming, Utah, Colorado, New Mexico)

PACIFIC REGION

821 Market Street,
San Francisco, California

(Includes: California, Nevada, Oregon, Arizona, Washington)

NUTRITION
FOR
YOU!

By WALTER WILKINS, M.D., Ph.D.
and FRENCH BOYD, B.S.

PRINTED IN U.S.A.

HAD YOU EVER THOUGHT OF THIS?

Why do we fly better than we eat? Why have we been so slow to use what we've learned about nutrition? Think of what has happened in aviation. Both of these sciences were in their infancy 40 years ago. Discoveries in both of these fields have been astounding. Aviation has been making use of its discoveries, while too much of our nutrition knowledge has been left in the laboratory and the textbook. Its progress from the laboratory to the home has been too slow.

Perhaps it hasn't been our lack of willingness to accept the new knowledge of nutrition so much as the fact that the very bulk of it has left us bewildered. Then too, it has been hard for us to break our old habits. When new knowledge bucks up against old habits, one or the other must suffer.

The purpose of these lessons is to study our food habits. In order to see how much these habits improve, a score sheet has been provided (pages 46-47). Score yourself or your family before starting these lessons and again after completing them. This check-up will give you an overall view of your food habits and may suggest improvements.

REMEMBER THIS —

World conditions have greatly affected the food situation. Some changes in our food habits have already become necessary. We may expect further changes. In order to be well-nourished, it is important that we have a working knowledge of foods and their uses in the body. Then we can make the necessary adjustments in our diets and still get the food substances we need. In fact, with such knowledge, we can use these changes to improve our nutrition!

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DANGER SIGNALS—STOP, LOOK, AND LISTEN!

Have you ever heard someone say, "I must have eaten something that made me sick"? Yes, you've heard that many times. On the other hand, did you ever hear anyone say, "I'm sick because of something I didn't eat"? Probably not. Yet, this often happens.

When we say we are hungry, we mean that we have a craving for food. Our stomachs are empty and we want to eat. This has been called **hollow hunger.** Almost any kind of food will satisfy hollow hunger if we get enough of it.

But there is another kind of hunger that may not be so well-known to us. It has been called **hidden hunger.** Hidden hunger is very common in this country. It results from diets which are lacking in important food substances. We must remember that such diets may satisfy our hollow hunger so that we don't feel hungry in the ordinary way. The body has many ways of showing that it is not getting the right kind of food. These warnings are danger signals. Often we fail to recognize these distress signals, or fail to realize that they are "hunger" signals.

The signals of **hidden hunger** that we ourselves feel and experience are called **symptoms.** Those signals that other people, especially the doctor, observe in us are called **signs.** A malnourished person would hardly have only one of these symptoms or signs. He would be more likely to have several of them. We must remember that people can be malnourished in a great many ways, just as they can have many different "catching" diseases. There are a great many food materials. Some people may lack certain food substances while other people lack other food substances. It is because of this that we have many different kinds of malnutrition, which produce different signs and symptoms.

What are some of the most common danger signals which may warn us of **hidden hunger?** Well, here are some which are very often due to **hidden hunger.**

1. Much underweight (in children failure to gain regularly)
2. Much overweight
3. Poor posture
4. Mild bone deformities
5. Flabby muscles
6. Rough skin
7. Skin too pale
8. Lack of strength
9. Lack of energy
10. Laziness
11. Tiring easily
12. Always tired
13. Lack of mental alertness
14. Feel depressed
15. Cross and fussy
16. Poor appetite
17. Frequent colds and sore throats
18. Chronic constipation
19. Spongy, bleeding gums
20. Rotten teeth
21. Night blindness
22. Eyes oversensitive to light
23. Eyes tire easily
24. Dull eyes

WHY EAT ANYWAY?

Why do we need food?

Food serves three general purposes in the body. It supplies:

1. **Fuel** for heat and motion.
2. Material for **building and repairing** the body.
3. Substances for **regulating body processes.**

Fuel

Our bodies must have fuel to burn in order to produce heat and motion. We measure the **fuel value** of food in **calories,** just as we measure electricity in kilowatt hours. If we eat more fuel foods than we burn, the excess fuel is stored as fat. Unfortunately, we have little choice of storage space.

Aside from heredity and certain forms of illness, our weight is determined largely by the balance (or lack of balance) between our eating and our exercise. If we habitually eat too much fuel food for the amount of exercise we take, we gradually become more and more overweight. Before we know it, we have become fat. This hoarded fuel puts a strain on the body. It overworks the heart, tires the feet, disturbs the conscience, and decreases the attractiveness of the individual.

It is also undesirable to be too thin. People who are very thin may be unhealthy, not because of the thinness itself, but because of the conditions which brought it about. Their problem is not to put on fat alone, but also to increase and strengthen other body tissues.

Building and Repairing

As a house is built from lumber, nails, brick, mortar, shingles, and other materials, our bodies are built from building substances which are in the foods we eat. It is difficult to say that one building material is more important than another, since **all** of them are essential. The lack of any one material usually weakens the entire body and slows it down.

The soft tissues of the body are composed chiefly of protein (and water). Thus, protein is an essential building and repair material and, as such, is the one needed in the largest quantity. Remember that carbohydrates and fats are used chiefly as fuel.

You can't judge the importance of a food material by the amount needed. The bulk of nails used to build a house is small compared to the amount of some other materials needed, but nails have an important part in building houses. In the body some important building and repair materials are needed in very small amounts. For example, the amount of iron needed daily is smaller than a pinhead, but no other food substance can take its place.

Regulating Body Processes

(Keeping the Body Working Normally)

There are certain food materials which the body needs in small amounts, but which are very essential to the health and normal working of the body. These include certain minerals, and the various vitamins. Water is very necessary for the normal working of the body and is needed in large amounts.

While calcium and phosphorus are needed in large amounts to build bones and teeth, small amounts of these and other minerals are needed to help control certain body functions and various chemical processes going on within the body. For example, calcium and other minerals help to regulate the beating of the heart, and iodine is necessary for proper working of the thyroid gland. Minerals play an important part in keeping the body working normally.

Vitamins have a great deal to do with what goes on in the body. The only vitamin which we know can be produced in the body is vitamin D. For this reason we must eat foods which contain vitamins. Under ordinary conditions we can get a sufficient supply from a good diet.

Water has many uses in the body. In fact, the body itself is about two-thirds water. Nearly every chemical change which goes on in the body depends on the presence of water. Although water has no food value in the ordinary sense, it is so necessary to life that we could not live long without it. We get some water in our "solid" foods, but usually this is not enough. Most people need eight or more cups of liquids a day. This can include soups, fruit juices, and other beverages as well as plain water.

So What?

Food has three general uses and many special uses within the body. We cannot afford to run short of essential materials. Foods which supply many of these materials are called **protective foods.**

If you want to look your best, feel your best and do your best work, learn what foods you need, and then be sure you get them.

KNOW YOUR A, B, C's

Vitamins are newcomers in our **knowledge** of nutrition. For many years no one even suspected their existence. In spite of this, people in different parts of the world had known for hundreds of years that certain foods could cure certain diseases, but they did not know **why.** We know now that these foods contained certain vitamins the lack of which had caused the disease. As early as 1757 British sailors found that scurvy, the dreaded disease of the days of sailing vessels, could be prevented by eating limes. It became a custom for British ships to carry limes for this purpose, and to this day British sailors are called "Limeys."

Chemists have learned to prepare certain of the vitamins in the laboratory. This has made it possible for scientists to learn more of the function of these vitamins. Now doctors can give large amounts of vitamins when necessary. Also we have been able to "enrich," "restore," or "fortify" a number of important foods by the addition of certain pure vitamins as well as minerals.

Vitamin A

Can you see well in dim light? People who get too little vitamin A cannot. Their eyes cannot adjust quickly to changes from bright to dim light. Highway safety people tell us that "night blindness" causes many automobile accidents. True "night blindness" is one of the signs that we are not getting enough vitamin A.

Children must have vitamin A to grow normally. Both children and grown people need vitamin A to keep eyes, skin, and body "linings" (mucous membranes) healthy. If the "linings" of the nose, throat and lungs are healthy, they are better able to fight off diseases such as colds, sore throat and pneumonia.

Many common foods are rich in vitamin A. All of us should be able to get from such foods the vitamin A we need.

These foods are good sources of vitamin A:

Dark green leafy vegetables

- Turnip greens
- Mustard greens
- Kale
- Spinach
- Beet greens
- Endive
- Broccoli
- Collards

Yellow vegetables and dark yellow fruits

- Sweet potatoes
- Carrots
- Yellow squash
- Pumpkin
- Yellow corn
- Apricots
- Yellow peaches

Other foods

- Liver
- Egg yolk
- Yellow cheese
- Butter
- Cream
- Whole milk
- Evaporated milk
- Fortified oleomargarine

Eat several of these each day.

Vitamin B_1

(Thiamine)

Doctors tell us that very few of the American people get enough vitamin B_1 (thiamine) to keep them in the best of health. Do you? Children who do not get enough vitamin B_1 cannot grow normally. Both children and adults whose supply of this vitamin is too low may feel tired and cross. They often have poor appetites. Sometimes they become "fussy" about their food. Occasionally, they have dull aching pains or even neuritis. We need B_1 to keep our nerves in good condition. It helps our bodies use the sugar and starch (carbohydrates) which we eat. The more of these we eat, the more B_1 we need.

Many of us have never had enough B_1 because we do not eat enough of the foods which supply it. Many foods supply vitamin B_1 in small amounts, but we have very few foods which give us large amounts. For this reason, we should eat, each day, **several** of the foods which supply vitamin B_1.

Here are some foods which help supply vitamin B_1:

Soybeans
Soybean meal or flour
Whole wheat bread
Enriched white bread
Lima beans and fresh peas
Dried beans
Peanuts and peanut butter
Oatmeal
Whole wheat or "restored" cereals
Lean pork
Liver
Oysters
Lamb
Fish roe
Chicken
Turkey

Vitamin C

(Ascorbic acid)

In a brick house mortar is needed to hold the bricks together. In the body vitamin C is needed to help hold body cells together. Lack of it affects the whole body. There is one easily recognized danger signal, which is often due to lack of this vitamin. It is spongy, tender, bleeding gums. In the gums are thousands of tiny blood vessels, which are made of just one layer of cells. When the cement which holds these cells together gets weak, the cells break apart, and the blood gets out. Such gums bleed when you bite hard food, or when you brush your teeth. The same thing may be happening to small blood vessels in other parts of the body. Muscles, bones, and teeth are weakened when we run short of this vitamin. This condition is very common and is actually a mild form of the disease known as "scurvy."

These foods are rich in vitamin C:

Oranges
Grapefruit
Strawberries
Broccoli
Tomatoes
Cantaloupe
Turnip greens
Kale
Mustard greens
Cabbage
Cauliflower
Turnips
Green pepper
Watermelon

Other fruits and vegetables, raw or properly cooked, may supply small amounts of vitamin C. In winter, tomatoes, oranges and grapefruit, canned tomato, orange and grapefruit juice, and properly home-canned tomatoes, raw cabbage and turnips, and greens cooked for a **short** time, are the foods on which we usually depend for vitamin C. If such foods are kept covered and very cold, they lose little vitamin C.

Whenever possible, foods which supply vitamin C should be eaten raw. Vitamin C is very easily destroyed by heat and air. When soda is used in cooking the destruction is greater. When tomatoes are cooked for a long time in an uncovered pan, much of the vitamin C may be destroyed.

We need to get a good supply of vitamin C every day. Just as you drink water today, but will get thirsty again tomorrow, you may get your vitamin C today, but you will still need to get your supply tomorrow.

WE MUST HAVE THESE TOO

Riboflavin

(Vitamin B_2, or G)

You need some riboflavin (B_2) every day. It helps the cells of your body to use the carbohydrates, fats, and oxygen which are carried to them by your blood. If you don't get enough of this vitamin, things begin to go wrong.

You can't always see the things which go wrong, not until they are very wrong. People who run too short of riboflavin begin to feel weak and "run down." The skin of the face may be scaly, the hair may lose its luster and look rough and dull. The eyes may look dull, tire easily, become over-sensitive to light, and may burn and itch. Sometimes vision itself may dim, and can be corrected only by increasing the amount of riboflavin in the diet.

These are the foods which supply the largest amounts of riboflavin:

- Liver
- Milk
- Buttermilk
- Skim milk
- Evaporated milk
- Kidney
- Lean meat
- Eggs
- Beet greens
- Turnip greens
- Kale
- Mustard greens
- Broccoli
- Spinach
- Dried beans
- Soybeans
- Soybean flour or meal

Niacin

(Formerly called nicotinic acid)

Did you know that in the United States we still have people dying from pellagra? Many more are sick from this disease, and still more are on the verge of sickness. A person who has pellagra feels tired and weak. He may feel depressed or become irritable. His tongue may become red and sore. The backs of both hands or feet, both knees or both elbows, the skin of the neck or other parts of the body may become rough, red and sore, especially if they are exposed to sunlight.

We used to think that people got pellagra because they ate too much of certain foods. Now we know that pellagra is caused by something they **don't** eat. In other words, it's caused by a lack of something in the diet. That "something" is niacin. Most people are getting enough niacin to avoid pellagra, but many fail to get enough to keep them in the best of health.

Some foods which give us niacin are:

Liver
Lean beef
Lean pork
Canned salmon
Lamb
Peanuts and Peanut butter
Chicken (poultry)
Beef heart
Bran
Whole wheat bread and cereal
Enriched flour and bread
Milk
Turnip greens
Kale
Mustard greens
Collards
Spinach
Soybeans

Vitamin D

(The "sunshine vitamin")

Make your own vitamin D. You need it to help your body use the calcium and phosphorus that you get from food. When the sun shines on your bare skin, vitamin D is formed in the skin. It is absorbed by the blood and carried to the places where it is used. It helps the body to build bones and teeth and to keep them healthy. Adults must have vitamin D, but it is especially important for the young child, whose bones are growing and hardening. If such a child fails to get enough vitamin D, his bones may become soft and grow out of shape. This disease is known as rickets.

Remember that when sun shines through ordinary window glass, it loses its power to make vitamin D in the skin. Clothing which cuts out the sunlight also prevents the formation of vitamin D. When sunlight is dimmed by clouds or smoke, that too prevents us from making vitamin D.

We can't depend on any of the common foods to give us enough vitamin D. Eggs, fish roe, vitamin D milk, and a few other foods contain some Vitamin D, but usually not enough to meet the needs of growing children. Certain fish liver oils, for example, cod, tuna, shark and halibut, supply large amounts of vitamin D. In order to be sure that young children get enough vitamin D, doctors give them vitamin D preparations.

GIVE YOUR BONES A "BREAK"

Remember the bones and teeth. They need food, too! Sometimes we let the supply of materials they need become so low that bones become soft and weak. A growing child must have calcium (lime) to build strong, straight bones and sound teeth. If he runs short of calcium, he may become bowlegged or knock-kneed. The bones of his head or chest, or any other part of his body, may grow out of shape.

Grown people also need calcium to keep their bones and teeth healthy and strong. Some scientists are beginning to believe that a generous supply of calcium helps to prolong youth and even life itself! If there is not enough calcium in the diet, the blood draws it from the bones to use in other parts of the body. This may leave the bones in a weakened condition.

We must also have a little calcium in our blood. Blood could not clot if it did not contain calcium. We also need it to help regulate the beating of the heart and to keep nerves in good condition. We need a tiny bit of calcium in practically every cell of the body. A pregnant woman or a nursing mother needs an extra supply of calcium so that she can supply the baby's needs as well as her own.

To get the calcium we need, we must eat the foods which supply calcium. A grown person can get enough calcium if he drinks two glasses of milk a day. Since a child is still building bones, he needs three or four glasses of milk each day. Pregnant women and nursing mothers need a quart of milk daily. Skim milk, buttermilk, and evaporated milk contain as much calcium as fresh sweet milk.

It is very hard for a child, or even a grown person, to get all of the calcium he needs unless he drinks milk. Let's compare the amounts of other foods which we would need to give as much calcium as we get from three glasses of milk. Turnip greens give more calcium than any other vegetable and oranges give more than any other commonly used fruit. Cheese and oysters are also rich in calcium. But it takes three servings of cooked turnip greens, or three ounces of yellow cheese, or 60 large oysters, or 24 medium size oranges to give you as much calcium as you get from three glasses of milk. Self rising flour and enriched self rising flour also supply some calcium.

When the sun shines on bare skin, vitamin D is formed in the skin. Vitamin D helps us to use calcium and phosphorus. Thus, sunshine helps us to build our teeth and bones and to keep them in good condition.

Iron, the Blood Builder—Are You Getting Your Share?

Is your blood pale and thin? A person whose blood is pale and thin is **anemic.** He feels tired and weak. It may be hard for a child with anemia to keep up in his school work, just as it is hard for a grown person who is anemic to do a good day's work.

Iron helps our bodies to build the "red" of the blood. The red part of the blood (hemoglobin) has the job of carrying oxygen from the air in the lungs to all parts of the body. Every cell in the body must have its supply of oxygen. In order to work well, every muscle, every organ in the body, and even the brain and nerves, must have oxygen. If there isn't enough "red" in the blood, the muscles and organs suffer.

These are foods which are rich in iron:

- Liver
- Lean meat
- Oysters, clams
- Chicken, turkey and other fowl
- Turnip greens, mustard greens
- Kale, beet greens, spinach
- Dried beans and peas
- Molasses
- Apricots
- Eggs
- Whole wheat bread and flour
- Enriched white bread and flour
- Whole wheat cereal

To get enough iron, you need to eat several of these foods each day.

In certain areas, anemia is often caused by hookworm or malaria. These diseases should be treated by a doctor. It is almost impossible to keep the blood rich and red if it is being destroyed by hookworms, which suck blood from the intestines, or by malarial parasites, which break down red blood cells.

PROTEIN: THE BODY BUILDER

Are your muscles strong and firm? Can they take you through a good day's work or play? Muscles need food. Do you get enough to keep yours healthy? They are made of protein. A child must have protein to build his muscles and thus to grow. A large part of the protein we eat is used for building and repairing muscles, but other parts of the body need it too. The blood must have protein. Tissues which hold other parts of the body in place are made of protein. Even the bones, teeth, hair and nails need a certain amount. Grown people must have protein to keep their bodies in good repair.

What happens when we run short of protein? The blood becomes too thin and the muscles shrunken and flabby. Under these conditions children will not grow well. The body must have several kinds of protein. All proteins are made up of a number of building materials. The kind and amount of building materials varies in the different protein foods. If a protein contains all of the needed building materials, it is called a **good quality** protein. In order to get the protein building materials we need, we should eat several protein foods each day.

These foods are sources of **good quality protein**: Milk of all kinds, eggs, liver, lean meat, fish, poultry, and soybeans.

The following foods also provide protein: Dried peas, dried beans, nuts, peanut butter, cereals, and breads.

Notice that soybeans and all foods in the second group are usually low in cost. If we use enough of these foods **with milk,** the body can usually get from them the protein it needs.

Calories the Modern Way

There are some foods which contain only fat or carbohydrate. Lard is a pure fat. White sugar and white syrup are pure carbohydrates. Some foods contain small amounts of protein, minerals and vitamins, but are made up chiefly of fats and carbohydrates, or both. Candy, cake, unenriched white bread, pastries, white rice, white corn grits and meal, salad dressing, gravy and fat meats are made up mainly of fats and carbohydrates.

These foods supply fuel. Fuel foods are like the gas you use in a car. Gas makes the car go, but it is not a part of the car. If a part of the car gets broken and needs to be mended, or wears out, you do not just pour in more gas and expect that to repair the damage. Fuel foods help to make your body "go," but they cannot build bones or muscles or blood. They cannot keep your body strong and healthy.

If you drive your car fast you use more gas. If you take a lot of exercise or do heavy work, you use more fuel food. **You can get protein, minerals and vitamins along with your fuel** if you choose combinations of these foods: Milk of all kinds, cream, butter, cheese, eggs, lean meat, fruits, vegetables, whole wheat bread, enriched white bread, whole wheat cereal, oatmeal, potatoes (sweet and white), dried peas and beans (especially soybeans), molasses, and sorghum.

We must have enough food to supply the body with fuel for heat and motion. But remember that excess sugars, starches, and fats may be changed into body fat (human lard) and stored in various parts of the body, thus increasing the weight. Excess weight puts extra strain on the body.

CAN YOU LEARN "NEW TRICKS"?

What makes people like some foods and dislike others? Do we inherit our food likes and dislikes as we do the color of our eyes or the size of our feet? Well, let's see. Have you ever watched a baby when he is offered a new food? Usually when you put a new food into his mouth he spits it out, or pushes the spoon away. That is his way of saying "I don't like it." He doesn't like it because it's new. He is not used to it.

Believe it or not, few of us like a food until we get used to it. The baby learns to like one new food at a time. If that baby's parents are smart, they will keep offering him new foods until he has learned to like a great variety of them. A child's parents can set a good example by eating a large variety of foods. The child will want to try the foods he sees his parents enjoy. But if papa says he doesn't like this food and mama says that food makes her sick, the child will begin to make a fuss about his food, too. And so bad food habits begin.

Children will not learn to like and enjoy a food if they are forced to eat it. The healthy child who plays outdoors in fresh air and sunshine and who does not eat sweets between meals will be hungry at mealtime. He will be willing to try new food if only a small amount is put on his plate and he is not urged to eat it.

Anyone will eat with a better appetite when he is in pleasant surroundings. He will enjoy his food more if he forgets his troubles while he is eating, and if he doesn't have to listen to the troubles and worries of other members of the family.

Family arguments, stories of the children's naughtiness for the day, promises of punishment, etc., should be "parked outside" the dining room door. Is **your** dining room a courtroom?

Anyone can make eating an adventure. Look around at the foods which are available. Don't be satisfied to use the same two or three vegetables day after day and week after week just because the family likes them. Try a new one now and then. Before long your family will be liking many more foods. But many of us never think of trying a new food. We are like the baby who pushes the spoon away. We say "I don't like that," and refuse to try it. What we mean is "I never learned to eat that and I'm so 'sot in my ways' that I'm not going to try it now."

If you want to make eating an adventure, here are some suggestions:

1. Set a good example for the rest of your family by eating some of every food on the table.
2. Sweets, between meals, may spoil your appetite for real foods. Eat your sweets for dessert, then you can enjoy your meal and the sweets too.
3. When you are at the table make the meal a pleasant occasion. The rest of the family can't enjoy their food if you are complaining, grouching, scolding, or nagging.
4. Eat a good variety of foods. Try new things. It's the "style." If you follow it you are much more likely to be well fed.

LOST: VALUABLE MINERALS AND VITAMINS SOMEWHERE BETWEEN THE GARDEN AND THE TABLE

Has your food, before it gets to your table, lost most of the minerals and vitamins that nature put into it? As they grow in the garden or field, most foods contain important minerals and vitamins. Often, however, many of these are lost before we eat the food. Why? Here are some of the main reasons:

OVER-REFINING OF FOODS. We Americans have learned to use "refined" foods. Such foods have lost many of their minerals and vitamins. When wheat is made into white flour, the darker parts are taken out so that the flour will look "fine and white" and have better baking qualities. The darker parts of the wheat grain contain a large part of the minerals and vitamins which nature put into the wheat. We feed them to the cows, pigs, and chickens. Should they be better fed than we are?. White sugar, white syrup, white cereals, macaroni and spaghetti are other examples of over-refined foods.

Whole wheat flour, whole grain cereals, molasses, and sorghum syrup contain valuable minerals and vitamins. "Enriched" flour is white flour to which have been added iron, vitamin B_1 and niacin, which were lost when the brown part of the wheat was removed. It does not contain as many minerals and vitamins as whole wheat flour, but has more than plain white flour. All white flour and bread we use should be enriched.

AGING AND WILTING. Sometimes we lose vitamins by allowing vegetables to become old and wilted. When vegetables lie around in a warm place and become wilted, much of the vitamin C is lost. If we gather or buy our vegetables when they are fresh, and keep them in a cold place, we can save much of this vitamin. Freezing or proper canning of strictly fresh vegetables and fruits saves most of their minerals and vitamins.

SOAKING. Several of the minerals and vitamins which are in our fresh vegetables are easily soaked out by water. If these minerals and vitamins were colored, we could see them because they would color the water. You know what happens to the coloring of beets if you cut them up and soak them in water. The coloring is soaked out into the water. Well, this is just what happens to vitamins B_1, B_2, C, and niacin, and to iron and other minerals when we soak our vegetables.

COOKING IN TOO MUCH WATER. Minerals and vitamins soak out even more into the water in which we boil vegetables. If we throw away this water, we throw away minerals and vitamins. If we cook vegetables in just enough boiling water to keep them from sticking, and use the pot liquor to drink or in soups, we save minerals and vitamins. Often, when only a small amount of water is used for cooking, there will be no pot liquor left.

COOKING TOO LONG. This is still a common error. Long boiling spoils flavor and destroys some vitamins. Vegetables look better, taste better, and have more food value if we cook them only 10 to 20 minutes. This is long enough to cook most vegetables. Some vegetables require less time than this. Raw cabbage and tomatoes contain much vitamin C, but if we keep them simmering on the stove for an hour or two, most of it will be destroyed. Some of us like certain vegetables cooked with pork. The smart housewife starts her pork cooking first and adds the vegetable when the pork is nearly done. This avoids overcooking the vegetable.

ADDING SODA. Don't add a "pinch of soda" to vegetables to "keep them green" or to "make them tender." If vegetables are not too old and are properly prepared, they will be tender. The added soda brings out the green color of vegetables but it **knocks out** the vitamins B_1 and C.

REMEMBER THESE THINGS if you want to get all of the minerals and vitamins from food:

1. Choose foods which have not lost their minerals and vitamins.
2. Use vegetables which are really fresh or properly canned.
3. Do not soak minerals and vitamins out of your vegetables.
4. Use as little water as possible to cook vegetables. Use cooking water (pot liquor), if any. (See page 26.)
5. Cook vegetables quickly. Avoid overcooking.
6. Never put soda into your vegetables.

* * *

SOME SPECIAL FOOD PROBLEMS

1. Do you always eat breakfast?

You need it if you expect to do your best work. Most of us look forward to several hours of steady work before lunchtime. We can't expect to do our best work if we have failed to get the food we need to meet the body's demands for energy. Most of us go without food for about 12 hours between supper and breakfast time. If we insist on fasting for 17 or 18 hours, we can't expect to be bubbling over with energy for the day's work.

2. Do you eat out?

Even if you eat all three meals in restaurants, you should be sure to get the foods you need for health. This takes planning. When you go to a restaurant or cafeteria, use your head. When you look at a menu or at the foods on a cafeteria counter, have a general meal plan in mind. Remember to include **milk, fruits,** and **vegetables.** Order whole wheat, rye, or enriched white bread. Remember that all dark breads are not 100% whole grain breads.

Notice "specials" on the menu. **If they provide the things you need,** they are usually good buys. If not, or if they contain too many sweet or starchy foods, they are not bargains.

Proprietors of canteens, lunchwagons and small cafes are usually glad to serve any food which is in demand. They sell what most of their customers want. If enough customers ask for milk, fruit, whole wheat or enriched white bread sandwiches, and other real foods, the proprietors will usually try to supply them.

3. **If you don't get breakfast where you room—**

Is it impossible for you to get breakfast before you go to work? Have you thought of keeping fruit in your room and buying a glass of milk at a drug store or lunch counter on your way to work? A glass of milk and an orange or a glass of canned citrus fruit juice or tomato juice will give you a big boost. They will also supply a good share of several of the food materials you need. You might keep evaporated milk in your room. It is good mixed with water and flavored with spice, fruit juice, tomato juice, or chocolate. Whole wheat crackers and dry cereal can also be kept in glass jars or cans in your room. They are good for breakfast at home.

4. **Is lunch a problem?**

When time is limited and eating places are crowded, we are often tempted to take what we can get with the least effort, regardless of its food value. But we can't afford to fill up on starches and sweets, and neglect protective foods. All of us should try to get a glass of milk and a piece of fruit.

We can demand whole wheat, rye, or enriched white bread for sandwiches. The food value of our lunches could be greatly increased by using fruit juices (or milk) in place of coffee, tea or other drinks which provide only sugar and flavoring. Remember that the latter belong on the luxury, and not the food list. Let's put milk back on the food list along with bread and butter, and **then** include any other beverages which will add to the pleasure of eating.

5. Does your boarding house diet need repairs?

Do you board with someone whose meals seem to run too much to the starchy and sweet foods? Has the person who plans the meals had a chance to catch up on the newer knowledge of nutrition? Maybe you can help. Sometimes people who run boarding houses or lunchrooms stick to a few old "standbys" that they think most people want. They are afraid that "different" foods they might serve would be wasted—and the boarders displeased to boot. If the boarders and the manager of the dining room talked it over, a satisfactory solution might be found more easily than you think.

If this fails, you will need to "piece out" your meals. You can eat extra fruit and drink at least two glasses of milk each day. Choose as carefully as possible from the foods served at your boarding place. A second portion of vegetables at lunch or dinner will help. If you eat lunch away from your boarding place, buy foods which **fill in the gaps** in the day's diet. For between meal snacks choose milk, fruit or fruit juice.

6. Do you eat at home and carry lunch?

Don't let the morning rush cheat you out of a good breakfast and enough lunch to carry you through the day. You need to plan ahead. Each day plan the meals for the following day. If you cook your cereal at night and pour a thin covering of water on top, it won't get crusty. Next morning set it in a pan of water or a double boiler to heat. Such a cereal, if it is heated before it is stirred, will not lump. Of course, breakfast fruit can also be cooked the night before.

Lunch doesn't have to be just sandwiches. Raw carrot sticks, fresh or canned tomatoes, cooked or canned fruit in covered paper containers, a hot or cold drink in a thermos bottle—such things add variety and also increase the food value of your lunch. If lunch is carefully planned and such things as sandwich spreads are prepared the day before, lunch can be packed in a very short time.

* * *

ROME WASN'T BUILT IN A DAY

If you are trying to lose weight

When we get more calories than we need to provide fuel for heat and motion, our bodies change the surplus fuel into fat and store it away for a rainy day. If we habitually eat more than we need, and the "rainy day" never comes, our hoard of stored fat gradually becomes larger and larger. Before we realize it, we have become walking storehouses. People say that we are fat. We tell ourselves that we are only "plump."

The only way to get rid of the stored fat is to **use** it. To do this, we must burn more body fuel each day than we get in the day's supply of food. Remember that it is **only fat** that you want to lose. Remember, too, that you stored that fat a little at a time and you should lose it the same way. When you start to reduce, the first thing to do is to make sure that you are eating enough of the **protective foods** to keep you looking and feeling your best. Eggs, milk, fruits, vegetables, in fact **all of the protective foods, are just as necessary for you as for anyone else.**

People who are reducing often say that they are afraid to drink milk because "it's fattening." Remember that any food is fattening if you overeat. Cut down on sweets, fats and starches. Take more exercise; it helps you to burn the stored fat. Weigh yourself once a week—you should lose about one or two pounds a week. Don't get discouraged; if you continue to eat right and to get enough exercise, you will lose weight just as surely as you gained it when you ate too much and exercised too little!

A few people are fat because their bodies manage to get along on much less fuel than others can. This is because certain of their glands do not function normally. Many such people do not eat large amounts. They may eat a well-balanced normal diet but, for them, it supplies too much fuel.

Such people should go to the doctor for help. He can tell if you are fat only because you eat too much and exercise too little or whether it is because of a glandular disturbance. If he says that your fat is caused by overeating, take his word for it and follow the diet he recommends. Remember the doctor is not a magician. He can only tell you what to do. It is up to you to **do it.** That takes will power—or maybe it's won't power.

If you are trying to gain weight

Underweight people may seem perfectly healthy or they may appear to be sick. They are more likely to have poor posture and to tire more easily, to have less resistance to disease and to be more nervous and irritable than people whose weight is normal. Sometimes their thinness is caused by glandular disturbances or by chronic infections. More often it is caused by poor eating habits, by habitually getting less food than the body needs for fuel, for building and repair, and for protection.

If you are one of these people, you need to eat larger amounts of the protective foods and perhaps to add extra starches, sweets and fats. It is important for you to build up muscles and other body tissues as well as to store fat. For this reason, eat your protective foods first; increase such foods as milk, butter, whole wheat and enriched white breads, cereals, and other foods which supply minerals and vitamins as well as fuel.

Eat three regular meals a day. Don't let between meal snacks spoil your appetite for real food. If you can't gain weight on the amount of food you can eat in three meals, try eating something at bedtime. The food eaten at bedtime can make a fourth meal if necessary.

Don't be impatient. It may be hard to get started, but if you keep eating a little more than has been your custom, you will begin to gain. If you eat well but can't gain weight see your doctor.

Stay in the middle of the road

If you are smart enough, or lucky enough, to be "in the middle of the road," you undoubtedly want to stay there. Whether you are too fat, too thin or "just right" depends primarily upon **what you eat, how much you eat, and how much exercise you take.**

A safe rule to follow is to eat enough of the protective foods to supply the body with liberal amounts of protein, minerals and vitamins and then to eat just enough more to keep the weight normal. This can be done very easily. If your weight is normal and you are eating all of the protective foods you need, continue to eat as you have and weigh yourself once a month. If your weight begins to increase, cut down on your starches, sweets and fats. And don't wait until you begin to **look** fat. It's easier to avoid adding extra pounds than to take them off.

If your weight begins to drop down too much, check over the foods you have been eating to make sure that you are getting all of the protective foods; then increase the amount that you are eating. If you have been drinking two glasses of milk a day, make it three, add an extra slice or two of bread and butter, and take larger servings of other foods. Weigh yourself once a week. When you get back to normal, begin to cut down on the extra starches and sweets. Don't be like the slightly thin little girl who set out to gain ten pounds and didn't stop until she had gained forty!

Lesson Eleven

STRETCHING THAT FOOD D-O-L-L-A-R

Blind buying is bad business regardless of the size of your food budget. If you have to consider the cost of the food you buy, if you have to do a bit of figuring to get all of the things you need with the money you have to spend, these suggestions may help.

1. Plan Carefully

Plan at least three meals at a time. Include all of the things you need for good nutrition.

Compare your menus from day to day. If you've exceeded the budget one day, use less expensive foods the next.

If you eat two meals at home and one out, get your meat, fruit juice and eggs at home and save money.

If you don't get enough milk, fruits and vegetables at your boarding place, get them for lunch. It's poor economy to omit foods that you need for good nutrition.

2. Buy Carefully

Study prices. Do most of your buying from the store where you usually get the most for your money.

Non-staple foods (fruits, vegetables, meat, etc.), are the foods on which prices vary most. Buy them where you can get the most in **quality and quantity** for your money.

Remember this. Grocers who offer delivery service have to get more for their groceries than "cash and carry" stores charge. If you can't afford this service, carry your own groceries.

Look before you buy. Compare prices of different foods of the same type. Are turnip greens cheaper today than spinach? If so, buy turnip greens. Don't let your menu be a tyrant—it should be a guide.

Milk usually costs less when bought at the grocery store than when delivered to your home. Evaporated milk is usually the least expensive whole milk sold in most communities.

Is meat a budget buster? Cheaper meats can be used for stews, pot roasts and hash, and can provide just as much food value as expensive meats. If well prepared, they taste good too.

Beans to the rescue! When meat is scarce and expensive and your budget is about to break, beans can help to save it. They also help to supply most of the food materials supplied by meat.

Read labels—They tell:

1. **What the package contains.** They must list all materials used to make the packaged food.

2. **How much the package holds.**

Be sure to read **all** of the label. Sometimes surprising and interesting information is tucked away in fine print. Remember that a package which looks large may hold less than one which looks smaller. The **weight** of the food will tell you how much the package holds.

Economical amounts. Some foods are cheaper if bought in larger quantities. For example, tomato and citrus fruit juices and evaporated milk cost less per serving if you buy them in the large size cans.

Fancy foods and fancy packages. Grading, especially of canned fruits and vegetables, depends partly on uniformity of the size and color. Variations in size and slight differences in color do not mean that food value is less. You can usually save money by buying "lower grade" canned fruits and vegetables. An expensive package does not increase the nutritive value of the food it holds.

3. CHOOSE WISELY—If you buy these foods you get:

MORE FOOD VALUE FOR YOUR MONEY	LESS FOOD VALUE FOR YOUR MONEY
Beverages— Milk — Bottled, evaporated, dried, skimmed, buttermilk	**Beverages—** "Readymade" drinks
Fruits— Those in season and plentiful Low cost dried and canned Canned orange, grapefruit, and tomato juices	**Fruits—** Out-of-season or scarce Fancy canned Other fruit juices
Vegetables— Green and yellow vegetables Tomatoes {fresh when cheap / canned} Low cost fresh or canned vegetables. Dried peas and beans Potatoes	**Vegetables—** Out-of-season or scarce Fancy canned
Cereals and Breads— Whole grain or restored cereals Oatmeal Brown rice Enriched white bread Whole wheat bread	**Cereals and Breads—** White cereals, expensive processed cereals Spaghetti, macaroni White rice Plain (unenriched) white bread
Meats— Low cost — for stews, meat loaves, soups, meat pies Pork liver (for loaves and stews) Beef liver and heart Kidneys	**Meats—** Expensive cuts of meat—steaks, roasts, chops, etc. Calf liver Fat meats Bacon
Cheese—American or Cottage	**Cheese**—Expensive varieties
Eggs—When cheap and plentiful	**Eggs** — When expensive and scarce

ARE WE IN A RUT?

Americans like variety. We like new clothes, new movies, new music, and new kinds of fun. We are constantly changing our styles of almost everything.

No, in most ways, we Americans are not in a rut. But wait —what about our diets?

Do you eat the same things for breakfast each morning? If so, why not use some other good foods? Do you buy the same cuts of meat week after week? Have you tried some different vegetables lately? One pleasure we get out of eating away from home is that "we don't have to eat the same old thing"—we have something different. We can have variety at home no matter how little we may have to spend for food. Many hotels, restaurants, and boarding houses have learned this lesson. Those which serve the same things day after day soon begin to lose their regular customers.

We do like variety in our diets but too often at home we are in a rut with our food. Isn't that true? Too often we build our meals out of what's in the pantry rather than building our pantry out of what SHOULD BE in our meals. Let's "shake up" the pantry. Did you ever take an hour or two and wander over a modern grocery store looking at the great variety of foods for sale? Try it some time and see how many good foods you have been missing—how many that could be used on your table without extra cost.

How many vegetables have you had on your table during the past week? Could several others have been used? Vegetables vary greatly in their food value and in the minerals and vitamins they contain. Let's not stick to three or four old "stand-bys" but rather get some new ones on our list.

Then, too, many of the vegetables which we ordinarily cook could more often be eaten raw to give variety and to preserve more of the food value. Some examples are tomatoes, cabbage, carrots, turnips, turnip greens, cauliflower, and spinach. Have you tried salad made of raw cabbage and raw turnip greens or spinach?

How many kinds of beans and peas do you commonly use? Let's list a few that we can get: Lima, pinto, navy, soy, kidney, and string beans; and black-eyed, green (English), and crowder peas.

Breads offer a chance for variety. The modern housewife, who is keeping up with the newer knowledge of nutrition, is making sure that all white bread and rolls she serves are enriched. She also uses whole wheat bread. In making biscuits, loaf bread, pancakes, waffles, cookies, gingerbread, and cakes, she uses whole wheat or enriched white flour. Oatmeal is an excellent food that adds to the variety and food value of cookies.

Some of us depend too much on grits, white rice, macaroni or spaghetti. They are poor in minerals and vitamins. We could cut down on these foods and use more whole wheat products, enriched white flour, oatmeal, and fresh vegetables.

Is your garden in a rut? If you plant a garden, why not put in a few rows of new vegetables that you have not grown before?

ARE THESE "FORGOTTEN" FOODS?

CABBAGE—Available all the year. Easily prepared. One of the least expensive sources of vitamin C.

COLLARDS—Good winter vegetable. Low cost. Easy to grow. Good source of vitamin A. Good in iron and vitamin C. Fair for calcium. Fair in B_1, B_2.

TURNIP GREENS—Excellent source of vitamin A. Good for iron, calcium, and B_2. Inexpensive. Easily prepared. Available year 'round in most sections of the South. One of the best of the "green" family.

SOYBEANS — Least expensive source of good quality plant protein. Average serving of soybeans gives as much protein as an average serving of lean meat. Also good source of B_1, B_2 and iron. Soybean flour can be used in many ways.

PEANUTS—Good source of plant protein and thiamine.

OATMEAL—Good source of minerals and vitamin B_1. One of our best cereals. Cheap and plentiful. Keeps well. Can be used in many ways.

WHOLE WHEAT PRODUCTS—Good source of B_1 and contain other B vitamins. Good source of iron and fair for calcium. Can be used as cereal, breads, cookies, and cakes, and in many ways in which white flour is commonly used.

PRUNES—Good source of minerals and vitamin A. Use in cookies, cereal, and puddings.

MOLASSES—The blacker, the better. One tablespoon (black) gives as much iron as one egg or one-half serving of lean meat. Supplies a small amount of calcium. Inexpensive when bought in bulk. Use in cookies, cakes, puddings, bread or pancakes, and as a flavoring for milk drinks or ice cream.

HEART AND BRAINS—Give protein at low cost. Also supply vitamins B_1 and B_2. Can be used in many ways.

PORK LIVER—Excellent, low cost source of protein, iron, vitamin A, B_1, and B_2. Equal in food value to calf liver and much cheaper. Good as loaf, patties, or stew.

KIDNEY—Inexpensive source of protein, iron, vitamin A, B_1, and B_2. Is good prepared as stew or with creole sauce.

SKIM MILK AND BUTTERMILK—Excellent sources of calcium, protein, and B_2. Also provide B_1. Contain the same minerals and vitamins found in whole milk except vitamin A, which is contained in the cream.

EVAPORATED MILK (diluted with an equal amount of water)—Provides food materials found in fresh pasteurized milk. As any canned food tastes slightly different from the fresh food, evaporated milk has a different flavor from fresh milk. Good to drink, and for any other purpose for which fresh milk is used. Keeps indefinitely in the unopened can, and is always a safe source of milk.

FORTIFIED OLEOMARGARINE (has vitamin A added) —The best practical substitute for butter we now have.

PILCHARD (canned American sardines)—A good source of protein and also contains minerals and vitamins.

FISH ROE—Provides protein, minerals, and vitamins.

NOW, LET'S USE WHAT WE KNOW

No one has ever been well nourished just because, nutritionally speaking, he knew all of the answers. Unfortunately, our bodies can't build or repair themselves with knowledge alone. If we want to improve our nutrition, we must learn what to do and then **do it.**

We don't need to memorize a whole nutrition book in order to know which foods to eat. We have seen that there is no **one** food which we must eat to be well fed. There is always a choice. It is particularly important that we realize this when we face the prospect of shortages of certain foods.

There are certain types of food upon which we can depend for a generous supply of protein, minerals and vitamins. For good nutrition we should build our meals around these foods.

* * * *

1. **The various forms of milk** provide protein, thiamine, riboflavin and niacin, in addition to calcium. Unless we use as much as a pint of some form of milk daily, it is hard for us to get enough calcium and riboflavin. Evaporated milk, buttermilk and skim milk contain practically the same amounts of these materials as an equal amount of fresh sweet milk. An ounce of yellow cheese gives us about as much calcium and protein as we get from a glass of milk. Four tablespoons of dry skim milk powder equal a glass of fresh skim milk.

2. **Foods rich in vitamin** C run short in many American diets, especially in winter. There are a number of foods which are rich in vitamin C. Our problem is to make sure that we get some of them each day. Some of these foods are seasonal, and some are plentiful only in certain parts of the country. In spite of this, we can get enough vitamin C if we know where to look for it. It's found in these common foods:

Oranges
Tomatoes
Grapefruit
Raw cabbage
Green peppers
Green leafy vegetables
Cauliflower
Raw turnips
Cantaloupe
Watermelon
Strawberries

Often we get a false feeling of security by eating a small amount of one of these foods. Remember that it takes at least one **large** serving of even the foods richest in vitamin C to supply the daily need.

3. **Green and yellow vegetables** are rich in a number of minerals and vitamins. Nearly all dark green leafy vegetables are very rich in both vitamin A and iron. They are also among our good sources of riboflavin and vitamin C. For example, a generous serving of properly cooked mustard greens, turnip greens, or kale gives us all of the A, about ⅓ of the C, ⅓ of the iron, $^1/_3$ of the calcium, and $^1/_5$ of the riboflavin we need for the entire day. These are among our best and least expensive, yet most neglected foods. Most dark yellow vegetables are rich in vitamin A, since the yellow coloring material (carotin) itself is a form of vitamin A.

4. **Other vegetables and fruits** contain varying amounts of minerals and vitamins. They help to round out the day's food supply and give variety.
5. **Breads and cereals** are used by most of us in large amounts. Why not choose breads and cereals which contain important minerals and vitamins?
6. **Meat, poultry, and fish** give us protein. They also provide important amounts of thiamine, riboflavin, niacin, and iron. Dried peas, beans, and nuts also help to provide these substances, and can be used in larger amounts when the meat supply is limited.
7. **Eggs** are good food, and may be used generously if cheap and plentiful. They are rich in protein, iron, and vitamin A.
8. **Butter** is one of our best fats. It has more vitamin A in summer than in winter. It may be used generously if cheap and plentiful. Vitamin A—fortified oleomargarine usually costs less than butter and is the best practical substitute for butter we now have.

* * * *

When some foods are scarce, there are nearly always others of a similar type which we can use. Such changes will, no doubt, introduce us to new and valuable foods which we have not tried before.

In spite of a scarcity of certain foods, if we "know our groceries," we can be well fed, in fact, better fed than when we thought more about what we wanted than what we needed.

CHECK UP ON YOUR FOOD HABITS

Do this before starting the lessons in this booklet and after completing them. The results will show the trend of your diet.

Before	**After**	
....	....	1. I eat three regular meals each day. (Yes—10 points)
....	....	2. I drink milk every day (3 glasses — 15 points) (2 glasses — 10 points) (1 glass — 5 points)
....	....	3. I eat some of the following foods each day: oranges, grapefruit, tomatoes, orange juice, grapefruit juice, tomato juice, raw cabbage, raw turnips, or raw green peppers. (two servings — 10 points) (one serving — 5 points)
....	....	4. I eat a serving of dark green or yellow vegetable once a day. (Yes—10 points)
....	....	5. Each day I eat a total of 4 servings of fruits or vegetables—(Any combination totaling 4 servings) (Yes—5 points)
....	....	6. All white flour or white bread used is "enriched." (Yes—5 points)

Before	After	
		7. I eat some of the following foods each day: whole wheat bread; rye bread; whole wheat cereal; oatmeal. (two servings — 10 points) (one serving — 5 points)
		8. I eat one of the following foods each day: lean meat, fish, chicken or other fowl, soybeans, or other dried peas or beans. (Yes—10 points)
		9. I eat 3 to 4 eggs a week. (Yes—5 points)
		10. I usually eat sweets only after meals when they will not spoil the appetite for protective foods. (Only after meals) (Yes—5 points)
		11. In my home or boarding place vegetables are cooked in as little water as possible and usually only 10 to 20 minutes. (Yes—10 points)
		12. I get as much as 8 cups of liquid (water, milk, soup, etc.) per day. (Yes—5 points)
		Total Score

Excellent score — 100
Good score — 90
Fair score — 80
Poor score — 70 and below

A START TOWARD FREEDOM FROM WANT

The Story of the United Nations Conference on Food and Agriculture

"Our ultimate objective can be simply stated: It is to build for ourselves, for all men, a world in which each individual human being shall have the opportunity to live out his life in peace, to work productively, earning at least enough for his actual needs and those of his family; to associate with the friends of his choice; to think and worship freely, and to die secure in the knowledge that his children, and their children, shall have the same opportunities."

(From President Roosevelt's Address to the Delegates at the White House, Monday, June 7, 1943.)

UNITED NATIONS INFORMATION OFFICE
610 Fifth Avenue, New York

An agency of

The governments of Australia, Belgium, Canada, China, Czechoslovakia, Great Britain, Greece, India, Luxembourg, The Netherlands, New Zealand, Norway, The Philippines, Poland, South Africa, and Yugoslavia; the Danish Legation and the French National Committee; and the government of the United States of America.

"The conference could not have failed to be significant because it was the first United Nations Conference. But it has succeeded even beyond our hopes; it is truly epoch-making because, in reaching unanimity upon complex and difficult problems, you have demonstrated beyond question that the United Nations really are united—not only for the prosecution of the war, but for the solution of the many and difficult problems of peace. This conference has been a living demonstration of the methods by which the conversations of nations of like mind contemplated by Article VII of the Mutual Aid Agreement can and will give practical application to the Principles of the Atlantic Charter."

(From President Roosevelt's Address to the Delegates at the White House, Monday, June 7, 1943.)

NOTE: The full, official report of the United Nations Conference on Food and Agriculture may be obtained for 20 cents a copy from the Superintendent of Documents, Government Printing Office, Washington, D. C. The official report includes the complete texts of the Conference Declaration, Summation, Section Reports, Resolutions and Recommendations summarized here, together with a complete list of delegates and officers.

A New Approach to Peace

This is a report about the first United Nations Conference, the Conference on Food and Agriculture which met at Hot Springs, Va., from May 17 to June 3, 1943.

The delegates, of course, are reporting officially to their governments and to their peoples on the results of the Conference. Newspapers and radio carried daily accounts while the Conference was in session and all its conclusions and recommendations were made available to them. This report is not an official Conference document. It is an attempt to put together in one place the results and possible significance of a Conference that dealt directly with the stake in the peace of everyday people everywhere in the world.

At this Conference the United Nations began the task of constructing peace in terms of the needs of individual human beings. The delegates at Hot Springs began with Freedom from Want and with the first condition for Freedom from Want—the opportunity of every man to have enough food for himself and his family.

This was the first time that representatives of the nations have ever met together in order deliberately and directly to attack in concert this basic problem. There has never been any other international conference like it.

In the period between the last war and this war there were many attempts at agreed international action on tariffs, monetary and exchange arrangements and the like. These efforts failed. It was never clearly established in the minds of people that such arrangements are important only as means to an end and that the end is freedom from want. At Hot Springs the United Nations met in the belief that by cutting straight to the heart of the issue at the start, it would be less difficult to work out and to agree upon the concerted national and international methods and machinery necessary to advance individual human welfare.

The Conference had powers only to explore the facts and to make recommendations subject to ratification by the governments and the peoples in accordance with the constitutional procedures of each nation. Yet what was begun at this Conference can mean more in each household—whether it be in Iowa or Chekiang, in Devonshire, the Ukraine or Sao Paulo—than anything that was ever started at any other international conference before. It can mean more in terms of food and jobs, of health and decent living conditions, of security and a fair chance to get ahead. It can mean these things if what was begun at Hot Springs is carried through.

To see that it is carried through, the Conference called upon the Governments to establish as the first permanent United Nations organization one whose function would be to relate national policies with effective international action toward making freedom from want of food a reality in the daily lives of all people.

A working basis for close and continuing United Nations collaboration in the peace was established at Hot Springs. It will be up to the peoples and governments of the world to decide whether a good beginning was made there and, if so, to go on with the other necessary steps toward building a United Nations peace. These will be many and the Conference recognized that the first necessity is a world in which, after this war has been won, nations are secure against future aggression.

RESOLUTION NO. 23 The Conference therefore declared that the Governments should "affirm the principle of mutual responsibility and coordinated action to establish such conditions of international security as will make possible an expanding and balanced world economy" and "take in concert all necessary measures to secure the application of this principle and the achievement of this objective."

Making Good on the Atlantic Charter

The United Nations Conference on Food and Agriculture dealt primarily with post-war problems but the war made such a conference possible—and urgently necessary.

The concept of the United Nations itself was born of the war. It was pointed out during the Conference sessions that in peacetime we had been working separately on common problems, and one by one we lost the peace. In war we were, one by one, in danger of losing to the Axis aggressors. In unity we have found the strength necessary to win unconditional victory in the war. This Conference was called to begin united action to win the peace and to make good on the peace aims subscribed to by the United Nations.

Our aims are the direct opposite of those the Axis has sought to impose. Our enemies seek the enslavement of the world to the benefit of what they describe as the master races. We fight for "a peace which will afford to all nations the means of dwelling in safety within their own boundaries and which will afford assurance that all the men in all the lands may live out their lives in freedom from fear and want." These are the words of Article VI of the Atlantic Charter, to which all the United Nations have subscribed in their Declaration of January 1, 1942.

The Mutual Aid Agreements subsequently concluded by the United States with the Soviet Union, Great Britain, China, and other United Nations, reaffirmed these aims and provided for agreed action by each of the signatories, "open to participation by all other countries of like mind, directed to the expansion by appropriate international and domestic measure, of production, employment and the exchange and consumption of goods, which are the material foundations of the liberty and welfare of all peoples . . . and in general to the attainment of all the economic objectives set forth in the joint Declaration made on August 12, 1941, by the President of the United States of America and the Prime Minister of the United Kingdom."

The United Nations have begun now, while the war is still being fought, for good reasons. More food is needed for winning the war itself. Even with all the food we can produce, we shall still be short, now and for the first years after the fighting ends. Only by concerted measures begun immediately can we have enough to go around. The machinery of relief itself was not under consideration at this Conference. But production of enough food for the relief of hunger and provision of the means to produce more food were fully considered.

The Conference was held now for another reason. Building a peace of freedom from want is a step by step process. Peace is not made by statements of policy. Nor is peace the mere cessation of war. Peace is made by the hard work of applying in concert policies agreed upon in a spirit of mutual self-interest. It is a process of creation which has to begin in the war and continue in the building year by year after the fighting itself stops.

This Conference was held because the United Nations do not intend to allow the words "too little and too late" to be applied to their building of the peace.

Town Meeting of 44 Nations

The Conference on Food and Agriculture was called on invitation of the United States. The delegates came from 44 countries in all parts of the world. They came from little countries and great countries—from Luxembourg with a population of less than 300,000 people, and from China with a population of more than 400,000,000. They came from countries in every continent. There were men from the tropics and the sub-Arctic and the temperate zones. There were men from countries where people live crowded more than 700 to the square mile and from others where there are less than ten persons to the square mile. Together the delegates represented more than three-quarters of the world's peoples. This is the roll:

Australia
Belgium
Bolivia
Brazil
Canada
Chile

China
Colombia
Costa Rica
Cuba
Czechoslovakia
Dominican Republic
Ecuador
Egypt
El Salvador
Ethiopia
French Delegation
Great Britain

Greece
Guatemala
Haiti
Honduras
Iceland
India
Iran
Iraq
Liberia
Luxembourg
Mexico
Netherlands
New Zealand
Nicaragua
Norway
Panama
Paraguay
Peru
Philippine Commonwealth
Poland
Union of South Africa
Union of Soviet Socialist Republics
United States of America
Uruguay
Venezuela
Yugoslavia

NOTE: The Minister of Denmark also attended in his personal capacity.

From wherever they came, they were heard equally—Luxembourg and the United States, El Salvador and the Soviet Union, reborn Ethiopia and Great Britain, Iraq and China, Iceland and Brazil. The first United Nations Conference demonstrated that in practice, as in principle, there are no superstates or master races among the United Nations.

It was a democratic meeting in other ways. Some of the delegates were diplomats, but most of them were men who knew farming, were experts in nutrition and public health, or practical economists and administrators. They came in ordinary business clothes and they came to work. Each patriotically watched out for the interests of his own country but all found that there was much more to agree upon than to differ about. People from opposite ends of the earth found it remarkably easy to understand each other. They found that when it came to real human needs they all had much the same problems and the same ends in view, and that surface differences fade out on closer acquaintance.

There were 274 delegates and advisers. A secretariat of 138 members was provided by the United States, including technical specialists, interpreters, stenographers, clerks and others. The various delegations also brought with them considerable secretarial staffs. The Conference was organized in four technical sections and

11 working committees. Every country was represented in every section.

The first three sections dealt with problems of consumption, production and distribution of food and other agricultural and marine products. The fourth section was concerned with the way in which the work of the Conference could best be carried on and developed through a continuing international organization.

The Chairman of the American delegation—Judge Marvin Jones—was elected President of the Conference at the opening plenary session. The Vice-Presidents were the Chairmen of the four sections: Dr. P. W. Kuo, China's Vice-Minister of Finance; Mr. A. D. Krutikov, Vice-Commissar for Foreign Trade of the U.S.S.R.; Dr. Joao Carlos Muniz, Brazilian Ambassador to Ecuador; and Mr. Richard K. Law, Parliamentary Under-Secretary of State of Foreign Affairs of Great Britain.

The sections organized into committees in the first two days after the Conference opened. Thereafter committee meetings went on daily from morning until night. Committee chairmen were chosen from the visiting delegations and committee secretaries from the technical secretariat of the Conference. Most of the delegates were members of several committees.

The delegates spent the first week exchanging views and information in these meetings on the problems with which the Conference was called to deal. Then the drafting of recommendations and reports was begun. These were acted upon first in individual committee meetings, then by the sections and finally by the Conference as a whole. The texts thus worked out and revised were eventually unanimously adopted.

For the First Time Freedom From Want Is Possible

The Conference faced these facts:

Two-thirds of the people of the world spend their lives on the land—raising food. And two-thirds of the people of the world, including many who live on the land, have never had enough to eat. There are two billion, one hundred million people living on the globe. Fourteen hundred million of them do not have enough of the right kinds of food for health and a decent life. There has always been widespread malnutrition in all lands, even the most prosperous. In many lands there has always been actual hunger—and periodic famines that take the lives of millions. Hundreds of thousands die every year of diseases like pellagra and beri-beri that are directly caused by lack of the foods that protect health. Millions more die of diseases like tuberculosis which strike hardest at those who do not have enough to eat. Mortality among mothers and babies is highest in those regions and among those groups that are underfed. And for countless millions of adults weakness, ill-health and premature death are the result of malnutrition.

That was the situation before the war—a chronic condition of food shortages. The war has made things worse. It has made the chronic condition acute. Everywhere that Axis armies have gone they have brought hunger with them and robbed peoples of the food they produced. Hunger is the daily companion of those courageous millions who keep the flame of freedom still burning in the lands occupied by the Axis.

This is the story of want as it has always been and want made sharper still by Axis cruelty and oppression. These are the facts as they were faced by the United Nations Conference on Food and Agriculture. The Conference examined them in relation to another fact—the fact that man, through science, now has at his disposal for the first time in history the means for conquering want. For the first time we know enough about the requirements of the human body for different kinds of food, we know enough to be able to produce these foods in sufficient quantities, and we know enough to place them within the reach of all those who need them.

RESOLUTION NO. 1

The Conference unhesitatingly adopted a unanimous Declaration that freedom from want of food can be achieved. The delegates agreed that we have the tools. We have to find the strength and the common sense and the good will to use them efficiently and rightly.

No Nation Can Do It Alone

The Conference did not attempt to settle all the problems of food and agriculture in seventeen days. It came out with no blueprint. It did clarify the issues at stake and point to the principles of policy and the kind of action necessary to meet the issues. In addition to the Declaration, it adopted more than 30 sets of specific recommendations.

The responsibility for adopting those policies and taking the kind of action that will lead toward freedom from want in each nation belongs primarily to each nation and to its own government. This national responsibility for raising national levels of nutrition and the standard of living, for developing a more efficient agriculture and for providing better and more stable income for agricultural producers, was recognized in the recommendations of the Conference.

But the Conference also recognized from the very start that no nation, not even the strongest, could win freedom from want alone, just as all nations have found that they could not win freedom from aggression by acting independently of one another. The world is drawn too closely together. What one nation does affects too much what other nations can do. There was agreement that attempts at exclusive self-sufficiency have invariably damaged not only the well-being of people in other countries, but have led to depressions and lower standards of living in the countries which tried to go it alone.

Permanent United Nations Organizations

RESOLUTION NO. 2 The first recommendation of the Conference, after adoption of the Declaration of principles, was for the establishment of a permanent United Nations organization on food and agriculture. In this way action taken in one country will be tied in with action taken in other countries. By pulling together, the people of each nation will get some of the benefit of what is being done in all the other countries.

All governments accepting this recommendation bind themselves to their peoples and to each other to collaborate by effective measures in raising the standard of living of their own peoples and of all peoples and to report to one another on the progress achieved. They undertake this obligation in express terms and they must periodically account to world opinion on their stewardship.

This immediate and unanimous agreement on the necessity for continuing an organized collaboration of the United Nations after the war was one of the most striking events of the Conference. The delegates of the Soviet Union were among those who gave the strongest support to this plan, from the moment when it was first submitted in draft form.

The Conference set up an Interim Commission to which each of the 44 countries represented at the Conference was entitled to send a representative. It resolved that the Interim Commission should meet in Washington and begin its functions by July 15, 1943.

Proposed Functions

The functions of the Commission as defined in the resolution are:

a. To prepare and submit to the governments a specific plan for a permanent organization in the field of food and agriculture.

b. To prepare and recommend an agreement by which each government would formally recognize its obligation to raise the level of nutrition and standard of living of its own people; to improve the efficiency of agricultural production and distribution; to report to one another on the progress they have made; and to co-operate with other nations for the achievement of these ends.

c. To make such proposals and reports as are necessary to give effect to the other recommendations of the Conference.

The Conference instructed the Interim Commission to give full consideration to the following factors in preparing the plan for a permanent organization:

1. Its relationship with other organizations, national and international, which are already or may be established to deal with problems related to food and agriculture and the attainment of freedom from want.

2. Provision for membership in due course of other governments besides those represented at the Food Conference.

The Conference proposed that the Commission further consider the desirability of assigning to the permanent organization the following functions:

1. The promotion of research in food and agriculture, the collection and exchange of statistics and information and mutual aid in exchanging services for improvement of conditions.

2. The making of recommendations for national action and more effective mutual action on problems of nutrition; consumption standards; agricultural production, distribution and conservation; education and extension work in food and agriculture; farm credit; agricultural population problems; farm labor.

3. Recommendations for action in developing farm resources and redirecting agricultural production; for international commodity arrangements; for the encouragement of co-operative movements; the improvement of conditions of land tenure for farmers and other subjects on which the Conference itself made recommendations.

The United States government was invited to take whatever preliminary steps were necessary for the setting up of the Interim Commission.

Section I—Consumption Needs

The first section of the Conference was concerned with examining consumption needs, the relation of food to health and measures which can be taken to improve standards of consumption and reach reasonable national and international goals. The reports presented by delegates on conditions in all countries made it very clear that even the greatest possible increase in production of those foods essential for health would not for many years provide enough to meet the minimum nutritional requirements of the world's population. The so-called surpluses of the past have generally resulted from maldistribution leading to under-consumption.

The Conference reported that malnutrition in varying degrees is present in all classes and countries, "but more particularly it is the close and constant companion of poverty, both national and international. . . . On the positive side, there is much evidence of the general improvement of health and physique that can be produced by the improvement of diets and there are also striking examples of the prevention of food deficiency diseases by appropriate measures. Successes already achieved provided abundant hope for the future, but what has already been done is little in comparison with the tasks that lie ahead. . . ."

Even in the United States and some of the British Dominions, which are regarded as among the best-fed nations of the world, there is widespread malnutrition among low-income groups. The situation is far worse in parts of Europe, the Far East, Africa and Central and South America.

India and China together have about two-fifths of the population of the world. Food deficiency diseases and other evidences of malnutrition among a majority of the population are general in both countries. In India nearly half of all deaths occur among children under ten years of age and there is a similar high mortality rate among young children in Java. There is plenty of evidence to show that malnutrition is the chief cause of these early deaths.

There is further evidence that in those regions and among those population groups in all regions where income is lowest and sufficient food most lacking, deaths from tuberculosis are seven to eight times more numerous than they are among the better-fed.

The Conference declared it would be impossible to compute the cost of malnutrition to the world either in human terms or in economic terms. The cost is beyond calculation and the victims are in every country—the victim of pellagra with vacant eyes and dragging, feeble body, the farm-hand with swollen legs working in the rice paddie and the child whose bones are deformed by rickets are only a few among its most evident living witnesses.

On the other hand, the newer knowledge of nutrition and its relation to health is one of the great scientific miracles of our time. This knowledge makes it possible to wipe out diseases which result from diet deficiencies; to increase resistance to other diseases; to lower infant and maternal mortality; to attain a higher general level of physical and mental vigor for all people and to prolong the average expectation of an active productive life by as much as ten years.

RESOLUTIONS NOS. 3, 4, 5, 6

In the light of this evidence the Conference made a series of recommendations to the governments calling for sustained efforts to improve the health of their peoples by improving their diets; to take positive measures especially to improve the diets of the "vulnerable" groups such as mothers, infants, pre-school and school children, adolescents, and families with numerous children in low-income groups; to investigate further the relationship between malnutrition and all diseases and in particular to undertake measures to wipe out those diseases that are directly caused by diet deficiencies.

Nutrition Goals

Scientists now know the diet requirements of human beings for health. They state them in terms of calories, proteins, vitamins and certain mineral salts. It is then easy to translate these into common food terms. Such standards are now available. The Conference did not attempt to set up one universal standard at this time. Several examples of a minimum diet sufficient for health were presented. One of these'* which is merely illustrative of the way such standards can be worked out, would call for the following amounts per person per week in terms of the weights of food as delivered to the kitchen:

	Pounds per Person per Week
Grain products (bread flour, cereals, etc.)	4.4
Fluid Milk (quarts)	4.3
Starch-rich tubers, roots and fruits (potatoes, bananas, rice, etc.)	3.5
Dry peas, beans and other mature seeds and nuts	0.5
Leafy green and yellow vegetables (cabbage, lettuce, carrots, etc.)	1.5
Other vegetables and fruits (oranges, tomatoes, etc.)	2.3
Meats, fish and poultry	1.7
Eggs (numbers)	4.4
Sugars	0.7
Fats	1.0

There are of course many other possible combinations of kinds and quantities of food which would also provide the consumer with the proper amounts of calories, proteins, vitamins and mineral salts.

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*Translated into terms of food from the table of recommended allowances for nutrients drawn up by the National Research Council. The level of consumption of several foods, particularly sugar, is already higher in the United States and a number of other countries, than that indicated in the table.

RESOLUTIONS NOS. 7, 8, 9, 10 The Conference recognized that it will not be possible in the greater part of the world to reach at one step such levels of consumption even after the war is over. It will be possible everywhere to start immediately to improve diets and to establish intermediate standards of nutrition that will bring each country nearer the ultimate goal. That is a responsibility recommended to the governments by the Conference. One of the first requirements will be to set up in each country national nutrition organizations in which policies of public health and agricultural production will be geared together. It is necessary in every country to know what foods are needed most urgently for better health and to plan and direct agricultural production, imports and exports accordingly. It is necessary also, the Conference declared, that the nations coordinate their nutrition policies through the permanent international organization, exchanging advice, information and technical assistance and reporting to one another on the progress achieved.

Uniformity Not the Aim

In all the Conference discussions of nutrition it was emphasized that good nutrition does not mean the same kind of diet everywhere. The needs of people living in Boston, Mass., for proteins, vitamins and minerals may be substantially similar to those of people living in Sverdlovsk, Chengtow or Baghdad. But the translation of these requirements into foods will vary greatly according to climate, taste and custom and the available resources of the country.

Typical diets in the tropics, for example, do not contain meat, milk and eggs except in negligible quantities. More of these are generally desirable, but it may be very difficult to produce them or provide them from outside. In the meantime, however, there are generally other foods such as soybeans or lentils, fish, leafy vegetables and certain types of fruits which are already familiar. If their production is rapidly increased, they can immediately begin to work many of the improvements in health that are obtainable from meat, milk and eggs.

The aim of those in each country whose task it is to secure improved nutrition, the Conference declared, should be to frame their policies so that they are in tune with the traditions of the country. The end objective, a diet adequate to health, is the same in all countries. The ingredients will differ in each.

Section II—Production Goals and Policies

The second section of the Conference found that adequate nutrition—which is another way of saying freedom from want of food—sets production goals for the farmers of the world far higher than any reached before. Evidence was submitted indicating that total world food production probably should be doubled. It has been estimated that production of cereals ought to be expanded 50 percent; of meat 90 percent; of milk and other dairy products 125 percent; of vegetable oils 125 percent; of fruits and vegetables 300 percent. It will be necessary to produce more food per acre and eventually to bring under cultivation every acre in the world that can be developed economically. To do this, the Conference declared, measures must be taken to insure the farmer a fair return for his investment and his labor and a standard of living and income on a par with other groups in society.

Right now freedom from want of food is further off than ever. The Axis has spread hunger like a plague in Europe and Asia. Long-range production policies were therefore considered by the Conference in the light of immediate needs. The first requirement is the relief and prevention of hunger now, and in the years immediately ahead.

Reports to the Conference made plain that there will be for several years a world shortage both of foodstuffs and the means of production, such as farm machinery and implements and fertilizers. Until the fighting ends there also will be shortages of gasoline and transport. Among the foodstuffs some shortages will be acute. The Conference concluded that there was certain to be an acute world shortage of cattle, pigs and other livestock, and of vegetables and animal fats and oils. Conditions of war have killed off livestock by the millions in many parts of the world and tons of fats and oils go up in bomb and shell explosions every day on all the fighting fronts. In addition the Conference delegates believed that there may be shortages in some parts of the world of the direct calorie foods, including even bread grains, though local surpluses may continue elsewhere, because of transportation shortages.

Immediate Production Needs

RESOLUTION NO. 12 The Conference therefore called for the immediate adoption of production policies in all countries outside the battle zones that would put the elimination of hunger first and the improvement of diet second. The first necessity is to expand the growing of crops for direct human consumption because these use up fewer resources in manpower and land than meat and other livestock products. This must be done, the Conference declared, even if it means temporarily holding back the rebuilding of livestock herds in those areas where they have been reduced.

At the same time every possible effort will have to be devoted to producing more farm machinery and fertilizers and to providing transport. This is vital in order to restore agricultural production as rapidly as possible in the liberated areas so that they may play their full part in relieving the shortages themselves.

RESOLUTION NO. 13

The Conference called for concerted measures by all the governments in the shortage period to prevent unrestrained competition and speculation in scarce supplies of foods, production materials and transport facilities. It is essential for the preservation of life itself to secure through equitable distribution the maximum advantage for each country from the available supplies. This result can be secured, the Conference warned, only if the governments act together and in time.

Those countries which have been occupied in whole or in part by the Axis made it clear at the Conference that they did not want charity. What they asked was help, and prompt help, of the kind to enable them to help themselves. This point was made in all discussions of immediate production needs. There was full agreement of everybody at the Conference, among delegates whose countries have been despoiled and delegates whose countries have been fortunate enough to escape damage by the enemy, among those from countries with the most fully developed resources and those from nations with the fewest resources. Taking the unanimous sentiment of the Conference as reflecting the beliefs and desires of the peoples represented, then the United Nations do not want a world in which poorer countries are kept on continuing relief. They desire that whatever immediate relief is necessary continue for as short a time as possible. They want a world of mutual help, in which each country is aided to improve its own lot, to produce more for itself, to trade more and thereby increase the trade and contribute to the prosperity of other countries as its own standard of living rises. And they desire policies to be adopted that will bring these developments about, as President Roosevelt told the delegates, "without exploitation on the part of any nation."

The Transition to Long-Term Production Planning

RESOLUTION NO. 14 The Conference declared that concerted action is necessary not only in the immediate future. It will be even more necessary in the transition period after the acute shortages have been overcome by restoring devastated areas and increasing production in other regions. Then, without concerted action on lines agreed upon in advance, there may be danger of too much production of bread grains while there continues to be too little production of meat, eggs, milk, oils and fats, fruits and vegetables. The Conference therefore recommended that the Governments act together to encourage gradual shifts in production toward the protective foods and toward the production of the staple foods where they can be produced most efficiently. This should be done in line with a long-term production plan aimed at the best use of agricultural resources on a world scale.

The adjustment will be eased by a basic fact. Dairy and cattle and chicken farming require more land and labor for each unit of food produced than do cereals. Thus adjustment of production toward the long-term goals of higher nutrition will in itself create a demand for the use of more farm resources. Good nutrition will require a vast expansion of the production of these protective foods. Progressive development of farm production along these lines coupled with progress toward full employment and the reduction of trade barriers will therefore result in higher farm income, wider diversification of farming and better and more stable conditions of life for farmers.

RESOLUTION NO. 15 The Conference recommended that in framing long-term production policies and in linking them with consumption needs each nation should examine the possibility of making periodic reports to the permanent food and agricultural organization on the production, export, import and consumption of foods.

The principle of national responsibility for international collaboration in food and agriculture, so frequently affirmed by the Conference, would thus be further extended in practice. With these reports it would be possible to weigh actual production against consumer needs, to find the weakest spots and recommend concerted action on a regional or world scale that would contribute to bringing actual production and distribution closer to required consumption.

Measures to Increase Food Production

RESOLUTIONS NOS. 15, 16, 17, 18, 19

The Conference action on production included the declaration that international collaboration will be necessary to aid in spreading the use of farm machinery, fertilizers, insecticides, and veterinary medicines, especially in countries where these have been unavailable or used only to a limited extent. The Conference also urged that Governments follow national policies that will make credit available to farmers, especially small farmers, at low rates of interest; that will encourage the further development of producer, consumer and credit cooperatives among rural people; that will establish land tenure systems giving more security and returns high enough to provide food and other necessities to the men who work the soil, their families and employees; that will promote the adoption in all countries of the new and improved agricultural techniques developed by science.

RESOLUTIONS NOS. 20, 21

The Conference foresaw that development of new lands will in many cases call for large scale public works, new roads and railroads, irrigation and sanitation projects, requiring the assistance of government funds, and recommended that Governments provide this assistance. It was urged also that measures be adopted everywhere for the conservation of resources of soil and water in order to preserve the basic resources of the land to future generations while at the same time reaching the maximum possible level of production.

RESOLUTION NO. 22

In many parts of the world millions of farm families are crowded so close together and have so little land to cultivate that they are not able to obtain, even for themselves, the essentials of adequate nutrition, much less provide food needed by others. There will be some opportunities for migration to newly developed areas wishing settlers, and international migration is an important factor. However, the Conference declared that the real clue to solving the problem of agricultural over-population lies in developing factories within the areas themselves. It recommended that areas needing such assistance should be aided to secure the necessary capital and equipment for the development of industries, transportation facilities and export outlets.

Such industrial development will provide jobs for many who cannot now gain a living from over-crowded acres. It will raise the general standard of living and thus enable those who remain on the farm to obtain a better livelihood. Development of a more balanced relationship between agriculture and industry will also open new markets to the specialized industrial countries. As standards and income rise, new demands and new markets will be created that were previously kept out of reach of even the most enterprising exporters by poverty and malnutrition.

Section III—Distribution

When the Conference delegates took up in the third section the problems of assuring a wider and more equal distribution of food to the peoples of the world, they were not thinking in terms of largesse from the prosperous to the poor. They were thinking in terms of concerted national policies and international agreements that together will add up to more jobs, and more money for all people with which to buy food and clothing. They were thinking in terms of a United Nations world in which men will be free and all nations, little and big, will stand on their own feet.

Full Employment and Expanding Trade

RESOLUTION NO. 24

Achievement of a progressively expanding world economy of plenty will require, the Conference concluded, full employment of all human and material resources everywhere in the world. Expansion of agriculture and expansion of industry are each necessary to the healthy development of the other. Growth of industry in under-industrialized areas will provide new purchasing power for the products of both agriculture and industry. The Conference declared that it is the primary responsibility of each nation to see that full employment is promoted within its own borders in such a way as to enable both its own people and all other peoples to take advantage of their special skills and to enjoy equal access to world materials and markets.

In order that all nations may obtain the full benefits of constantly expanding international trade, the Conference asked that the governments represented take action together to reduce barriers of every kind to international trade and eliminate all forms of discriminatory restrictions, including those applying to international transportation. The Conference also recommended united action to maintain balance in international payments, to provide for orderly management of currencies and exchange and to furnish technical assistance and to encourage long-term investment in countries needing development of their resources.

RESOLUTION NO. 25 The Conference came to the conclusion that international commodity arrangements and buffer stocks would be useful in preventing prices from going sky-high one year and hitting bottom the next year. They would also make shifts in production from one type of commodity to another more readily possible. Under such arrangements reserves of certain staple commodities now widely produced in large quantities would be set aside in fat years and sold in lean years. The Conference declared that these arrangements should not be restrictive, but such as to promote expansion of the world economy. The interests of both producers and consumers should be effectively represented and increasing opportunity should be provided for meeting world consumption needs from the more efficient sources of production. It was recommended that international organization should be created at an early date to study the possibility and desirability of such commodity arrangements.

School Lunches and Other Special Measures

Delegates to the Conference agreed that general measures for improving distribution through expanding production and trade would have to be supplemented by special measures in the case of food needed for health. Even during years of greatest prosperity in the most prosperous countries large numbers of the people living in them have been underfed and ill-clothed.

RESOLUTIONS NOS. 5 & 6 In addition to general social security measures, such as family allowances, social insurance and minimum wages, the Conference therefore recommended direct action to make protective foods available either free or at low cost to those groups in the population most in need of help if the general level of health is to be raised. It recommended special attention to the needs of pregnant and nursing mothers, infants, school children and those in the lowest income groups with large families. Many countries reported on the great results already obtained from the provision of free or low cost school lunches. The general adoption of such practices was recommended.

Great Britain's experience in dealing with a wartime shortage of food provided one of the most clear-cut demonstrations on a large scale of the results that can be achieved by such measures. In order to make what was available go around, it was necessary for Great Britain to adopt a strict rationing system in which standards of good nutrition were carefully applied. Special measures were taken to provide children and mothers with such protective foods as milk and fruit juices and to see that war workers had enough of the right kind of food to eat regardless of income. All other conditions of life have been more difficult—housing has deteriorated, transportation is short, and a large percentage of women have gone to work in war factories or joined the services. Yet in spite of these factors the general level of health has improved, the general death rate has fallen and the rate of infant mortality has dropped to by far the lowest level on record.

RESOLUTION NO. 27 The Conference also considered the fact that it may take some countries a long period of time to develop their own agriculture, industry and trade to the point where they can secure enough food for their people either from their own production or from trade. It was generally agreed that it would benefit both such countries and the people of all other countries if during this period special action was taken to make foods available from current world supplies to supplement the national food distribution programs of such countries. The Conference therefore recommended that the permanent organization consider measures to this end, together with special arrangements that could be used in the case of famines following catastrophes.

RESOLUTIONS NOS. 28, 29, 30 The Conference also made a number of recommendations, based on the experience of many countries, for the improvement of marketing facilities, of governmental services in marketing and increased efficiency in distribution that would bring more foods within the reach of more consumers and cut the spread between the price that the producer gets and the price that the consumer pays.

The Conference pointed out that the war has greatly speeded up improvements in the processing and preserving of foods, thus facilitating their transportation and storage. Dehydration and freezing now make it possible to market important but perishable protective foods much more widely than before. By means of air transport such foods in concentrated form can be carried into formerly inaccessible regions and distributed among people for whom they were previously completely beyond reach. This is especially true in parts of Latin America, Africa and the Far East. There airlines and airfields built for the needs of war, can also help in peace to attain the goal of freedom from want.

Summary of Results

The Conference on Food and Agriculture was the beginning of United Nations collaboration in building the postwar world. Necessarily the Conference spoke in general terms, but it spoke with unanimity. There was no sign at Hot Springs of any break in the ranks of the United Nations after the fighting stops. On the contrary, there was every evidence of a united determination to bring to bear upon the making of the peace the same beliefs in freedom and the same strength of unity with which the United Nations are driving irresistibly in the war toward unconditional victory over the Axis.

Throughout the reports and resolutions adopted by the Conference agreement was evident on such fundamentals as these:

First. Freedom from want is a goal that was always before beyond the reach of most human beings. Now, through the advances of science, it can for the first time be achieved for all men. Therefore it must be achieved.

Second. Freedom from want cannot be achieved all at once. It will take time. It will take a lot of hard, pratical work on the part of all governments and all peoples. It will require greater production by farmers and industry alike and greater trade both within and between nations than ever before in history. It will also require international security against aggression. Freedom from want and freedom from fear are indivisible. The one cannot be achieved without the other.

Third. Freedom from want in each country is possible if each country shapes its policies in the understanding that the goal can be reached only if all nations act together. The strength that will be required can be drawn only from the continuing unity and the increasing prosperity of the United Nations and the countries associated with them.

Fourth. In order to make this collaboration effective, a permanent United Nations organization on food and agriculture, linked with similar organizations in related fields, is essential. Through such an organziation the principle of mutual responsibility and coordinated action to attain freedom from want can be made effective. This mutual responsibility must be one which extends both from each government to its own people and from each government to other governments. And the Conference established also the obligation that each government should report to the others, and thus to the peoples of the world, on how well this responsibility was being carried out.

Fifth. The Conference showed that in the practice of collaboration the best interests of each nation are found to be more often supplementary to each other than in conflict with each other. Concerted national and international action should be undertaken on the basis of mutual advantage to be obtained by individual nations. And it is on this basis that the best interests of each will in the long run be served.

Sixth. Progress toward a higher standard of living cannot be made until the Axis attempt to enslave the world to poverty has been completely defeated and the damage has been repaired. The Axis has brought more hunger than ever to the world. There will be for several years a severe world shortage of food and many other necessities of life. Much will depend upon how well we share the sacrifices that will be necessary in this period and how closely and efficiently we work together to restore production and trade and to expand them as quickly as possible. Without close collaboration in food and agriculture now we cannot successfully bridge the period of shortages, nor can we lay the basis for going on, after the transition period has passed, to successively higher levels of income and better living conditions for the people in each country.

Seventh. The United Nations want a peace which will bring tangible benefits to individual human beings. By starting with freedom from want they are approaching peace in terms of providing a better chance to earn a living for every person, more and better food and decent housing for every family, and more equal opportunity for children to grow up strong and healthy. They believe that the framework of peace should be constructed on this basis.

Eighth. The United Nations believe that the attainment of freedom from want is necessary if the other freedoms are to be attained and held. By winning freedom from hunger for *all* men, *free* men will be more secure against the future rise and aggressions of tyrants. By winning freedom from want, *all* men will be strong enough to be *free*.

THE AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE

APRIL 4TH. 1891

3457 Walnut Street, Philadelphia 4, Pa.

The American Academy wishes to express its thanks to the United Nations Interim Commission on Food and Agriculture for making available the pamphlet "A Start Toward Freedom From Want," a copy of which is enclosed. Members of The Academy, to all of whom this pamphlet is being sent, will find it a clear and interesting statement of the work and plans of the recent conference at Hot Springs, Virginia.

ERNEST MINOR PATTERSON
President

November 1943

Howard 72006
Clark 75387

OFFICE OF WAR INFORMATION

FOR IMMEDIATE RELEASE W-186

WOMAN'S PAGE EDITOR: This weekly summary of Government orders and statements of interest to women covers the week of June 4 - 10.

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FOOD

All across the nation women are now paying an average of 5 cents less per pound for BUTTER, due to the price cut ordered by Office of Price Administration. MEAT PRICES, too, will be cut on June 21, except for cured and processed pork, on which the reduction is effective July 5.

This is the month when SWORDFISH comes into the market, reminds the Coordinator of Fisheries. In addition to being almost boneless, it contains a high content of both vitamins A and D.

A further step to provide farmers with supplies they need to increase FOOD PRODUCTION has been taken by WPB. A farmer may now obtain items of general industrial equipment frequently used on farms by merely certifying to his dealer that he is a farmer and needs the equipment in operating his farm.

RATIONING

After June 14, COFFEE ordered by mail may be "paid for" by enclosing detached ration stamps instead of the entire book, announces Office of Price Administration.

Only five questions need be answered on the new FUEL OIL ration applications which householders will receive soon, points out Office of Price Administration. OPA also suggests filling fuel tanks early in July as a help in the manpower and truck shortages.

CLOTHING

Restrictions on the finishing of men's and boys' WOOL TROUSERS have been lifted by a recent WPB action. Full cuffs may be attached only when sufficient material is left after fittings. The new regulation also permits the sale of trousers with simulated cuffs.

X-16809

In a recent order WPB cut the amount of rayon yarn available for manufacture of HOSIERY and other civilian products formerly made of silk and nylon to approximately 1/6 below present figures. This action was made necessary because of the increasingly large military requirements for rayon.

Supplies of COTTON YARN, thread, fabrics and other materials will be made available for production of men's women's and children's staple types of knit underwear, according to a recent WPB announcement.

More WOOL for civilian use has been made available by a recent WPB order, and manufacturers may now use their wool either for production of 100 percent new or blended civilian yarns and cloths.

COTTON FABRIC PRODUCTION for the first three months of this year exceeded by 27 million linear yards the amount produced during the comparable period of 1942, according to WPB announcement. Ninety percent of denims and denim stripes must go to manufacture of work clothes until further notice.

Office of Price Administration is consulting with makers of women's, children's and infants' UNDERWEAR, nightwear and negligees on the most effective way of controlling prices on these commodities.

HOUSEHOLD

Radio owners and radio repairmen are assured of getting the RADIO TUBES made from materials allocated to civilian production by recent WPB action. Civilian tubes will be stamped "MR" meaning "Maintenance and Repair," and manufacturers are not permitted to use such tubes to fill military orders. AUTOMOBILE RADIOS may now be sold with the automobile without special WPB authorization.

Ceiling prices on new ICE BOXES have been established by Office of Price Administration. These prices vary according to the model and the territory in which they are sold.

MISCELLANEOUS

"SCRAP" TIRES which can be made reusable by the application of patches and other repairs, in addition to the use of reliners, do not have to be turned in, says WPB.

Several changes have been made in WPB's regulation concerning MUSICAL INSTRUMENTS. Pianos and organs, previously banned, may now be made in very limited quantities upon authorization by WPB but will not be generally available. All musical instruments are limited in their use of critical materials to 10 percent by weight. Stringed instruments may continue to be produced by a manufacturer but in reduced numbers. Use of critical metals in repairing and overhauling and in replacement parts is also restricted.

Four hundred tons of broom corn have been released for the manufacture of BROOMS for military, industrial and civilian use. The Federal Prison Industries, Inc., made the broom corn available, since its supplies were ample until the next crop comes in, according to WPB.

Manufacture of METAL KEYS FOR OPENING CANS, except for military purposes, is prohibited, by WPB order.

Howard 72006
Nyburg 75387

OFFICE OF WAR INFORMATION

For Immediate Release W-174

WOMAN'S PAGE EDITOR: This round-up of Government orders and statements of interest to women will now come to you weekly instead of semimonthly. This release covers the week of May 1 to May 7.

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FOOD

DRIED AND DEHYDRATED SOUPS have been temporarily removed from rationing and fruit and vegetable juices, with the exception of pineapple, have been reduced in point value. Vacuum-packed corn, pineapple juice, canned pineapple, apricots, and fruit cocktail have all been increased in point value.

Additional packaging of ROASTED CHICORY, which is used for blending with coffee, has been permitted by the War Food Administration, and will make available to the home larger quantities of this extender.

The supply of CREAMERY BUTTER for civilian use is expected to be 1,300 million pounds this year, compared with the country's average annual consumption of 1,750 million pounds, according to the War Food Administration. The civilian supply of CHEDDAR CHEESE will run about 75 per cent of normal.

Community-wide CEILING PRICES, in effect May 10, cover poultry, fluid milk, bread, eggs, butter, packaged cheese, sugar, cereals, evaporated and condensed milk, flour and several other grocery items. Later ceilings will be announced on canned fruits and vegetables.

FRANKFURTERS, bologna and fresh and smoked sausage have had wholesale dollars-and-cents ceilings placed on them, and cents-per-pound retail prices will be established in the near future by Office of Price Administration.

VITAMIN B_1, or thiamin, and nicotinic acid-familiar to all women who study nutrition--have recently been placed under WPB allocation. This will assure adequate supplies for such essential purposes as the enrichment of breads and cereals.

In Office of Price Administration's drive to stamp out BLACK MARKETS in POULTRY, 88 new court actions against violators of price ceilings were begun during the last two weeks of April.

MISCELLANEOUS

LUGGAGE will be partially standardized by a new WPB order which allows only seven basic types. Nonessentials, such as fitted cases and animal carriers, are prohibited. The permitted types will offer enough variety for essential purposes.

MEDICAL SUPPLIES are being maintained at a level adequate to care for civilian health despite military and Lease-lend demands, according to WPB's recent supply round-up.

DIAPER birdseye and gauze are assured continued production as the result of a recent WPB order. Machines making these materials will not be permitted to convert to other kinds of goods.

CIGARETTES, CIGARS, smoking or chewing tobacco can now be sent to United States war prisoners and civilian internees held by Germany and Italy. Under an American Red Cross program, the prisoner's next-of-kin will be issued two tobacco labels each 60 days. These labels can be forwarded with a money order to a tobacco manufacturer who will send the merchandise, postage free. The first labels are being mailed about May 10.

Identification badges have been authorized for BLOCK AND NEIGHBORHOOD LEADERS of the Citizens Service Corps. These consist of a notched white ribbon bearing the official insigne--the letters CVD in a white triangle and blue circle.

Certificates of service will be awarded to persons enlisting in the U. S. CROP CORPS for farm and food processing plant work this summer.

WOMEN now make up from 70 to 80 per cent of the workers being hired by many aircraft companies. By the end of the year the War Manpower Commission expects half of all aircraft workers to be women.

Used METAL COIL AND FLAT BEDSPRINGS are now under specific dollars-and-cents price ceilings, placed to lower current inflated prices. As much as 50 per cent of the purchase price will thus be saved in some cases, particularly on sales in crowded war-industry areas.

GLYCERINE, from waste fat, is vitally important, WPB emphasizes in a detailed review of the glycerine situation. WPB points out that other potential sources of glycerine have been explored and that glycerine has now been prohibited for all non-essential uses. March waste fat collections show the biggest total to date, but under 50 per cent of the national monthly quota. Every housewife must save one tablespoonful of waste fat each day to meet the quota.

ADVANCE RELEASE: For SUNDAY Papers, May 30, 1943
Franklin -- 75012

Food

OFFICE OF WAR INFORMATION OWI-1861

(Photographs to illustrate this article may be obtained on application to the Photographic Section, OWI, Room 1405, Auditor's Building, 14th and Independence, Washington, D. C.)

Skills developed in tens of thousands of family kitchens will be needed to help feed the Nation this year as women who have never worked before are urged to sign up for war jobs in food processing plants.

Manpower is recognized as the most important single factor affecting the ability of the food processors -- canners, quick freeze and dehydrator operators-- to preserve this year's crops for the needs of the armed forces, Lend-Lease and workers on the home front.

By taking jobs in the food canning and processing plants nearest their homes, housewives--and business men who can pool their time--will be doing war work that will assure fighting forces the food they will need and home folks the quantities allowed them under rationing. A dearth of labor at harvest time will mean shortages next Winter.

Modern food processing, while exacting and requiring the use of some highly skilled help, is such that the novice can pitch in and after a few hours be doing necessary work from peeling tomatoes and making syrup for fruit to regulating the gauges on intricate machinery.

Most of the estimated 400,000 persons who will be needed for food processing at the seasonal peak this year will be in canneries, putting in tin and glass the supplies that will guarantee the Army its requirements plus meeting the needs of civilians and the quotas set for Lend-Lease. But about 15,000 persons will work in the far-flung branches of the 125 frozen food packing plants. Other thousands will work in the approximately 200 dehydrating plants, where fruits and vegetables will be dried on a scale never before attempted.

Not all the jobs are women's work. Strong backs are needed to handle the baskets of fruit as they come from the farmers' trucks, and the trays of cans as they come out of the cookers. Sturdy men are needed to brave the sub-zero cold in holding rooms where barrels of frozen fruit await consignment, or to lift loaded containers into refrigerated railroad cars.

But women will peel and sort, blanch and pack, putting fruit of a uniform size into certain containers, or, as in the case of tomatoes, cutting spots from otherwise good red fruit, which goes into other cans.

Men will do the bulk of the work in the pea viner sheds where the whole pea plant is threshed, the hulled peas rolling down chutes to fill box-after box which later will be shipped to the processing plant. Here the peas will go through one of two initial processes. In some canneries or quick-freeze plants, highly sensitized machines called tenderometers will assort the peas for size and tenderness. In others the peas, running along a trough, will go through a flume of brine that will send the tenderest to the top, intermediate grades to the middle, and heavier, tougher peas to the bottom. Rigid standards require that the grades be handled separately.

Workers in food plants will find that methods of preliminary preparation of the fruits and vegetables will be the same, whether the finished product is coming out in a dried form, in a frozen package or in tin. Corn, for instance, in any of these processes, is hand-assorted, then husked by machinery, and silked by machinery. The machines that cut the corn off the cob are hand-fed. Women can do the work as readily as men.

Beans are cut at both ends by mechanical snippers, but rows of women sit at conveyor belts (called inspection belts) to pick out the rusty or spotted beans as they pass by. Similar work is done on fruit, with eyes set for the bruised spots or for cores that should be entirely removed by machinery.

In many plants the cans are hand-packed after they have gone through the necessary inspection and blanching processes. In others the work is entirely mechanical, with machines releasing amounts of fruit and syrup sufficient to fill the can, then shutting off automatically.

Fruits require much more handwork than vegetables. But in bringing either to that state of near perfection the food processor requires, women quickly acquire the proper knack and speed. Workers wear sterilized gloves and are soon expert at picking out pieces of apple or apricot that discolored during drying, at standing at the controls of a feeding machine, or in doing one of numerous other simple but important jobs.

The Minnesota Canners Association lists 750 separate job classifications this year. They include labellers, blancher operators, closing machine operators, head seamers, brine room employees, cob reelers and silkers, knife sharpeners, pea testers and weighers, seam testers, tip and drain men, syrup room helpers.

The men who are at the controls of the machines that register quality or temperatures or pressure are experts, but most of the other work either is manual labor or consists of operating simple machinery.

In many food factories, three big processes -- canning, freezing and drying -- will be going on at once. Drying of foods is an old-fashioned method of stocking up for the Winter, one practiced for generations on many farms. But scientific methods have made it possible for the country this year to supply the soldier on the battlefield with dried Irish or sweet potatoes and other vegetables, such as the home-maker never attempted to dry. The military services have asked the food processors to dehydrate large quantities of carrots, beets, yellow turnips, cabbage and onions, as well as potatoes, this year. In addition, workers in drying plants will be packaging cranberries, dehdrated tomato juice cocktails and powdered soups.

The drying of fruits and vegetables was first undertaken on a large scale in California and the Northwest, and chiefly apples, peaches, apricots and prunes were dehydrated. Now the industry has spread far and wide, and because of the war, apple drying has developed as a big industry in the East. Drying of vegetables also is a growing business in Eastern states.

Early operations of washing, peeling, trimming, slicing and blanching are largely undertaken by women. In some drying plants the loading is automatic, but in most two or three women will spread the prepared food on large trays, which are then lifted into the dryer. The source of heat is generally steam.

The cold-pack method of freezing of fruits has been an expanding industry for a quarter of a century. But vegetables were not successfully frozen until 12 or 14 years ago, and only in recent years on a large commercial scale. The domestic consumer is familiar with the quick-freeze method.

Today the Army is taking cold-packed cherries overseas for pies, and the pie bakers of the Nation are relying on cold-packers to supply them with the fruits that will go between pastry covers in the year ahead. Ice cream manufacturers also rely on fruits that come to them frozen by the barrel. Some big pie bakers order up to a million pounds of cherries, frozen in barrels or 50-pound containers.

The cold-packers are the backbone of the preserving industry, also. It would be impossible, food processors say, for enough jelly, jam and preserves to be put up for American needs during the short season in which fruits ripen. Instead, preserve manufacturers order cold-packed supplies, and make up the sweets during the year.

Workers in the 80-odd cold pack establishments will mix sugar and fruit in the big containers that are stored in rooms of zero degrees Fahrenheit temperature for from 10 to 24 hours. The frozen products then are left in holding rooms until sent their pre-destined way.

There are several methods of quick-freezing of fruits and vegetables, and all are so mechanized that fewer workers are needed than for canning operations. One big concern, with plants in every part of the country, uses the cabinet method. The prepared fruit or vegetable is fed from a machine, complete in cellophane and box. Another machine wraps and seals it in wax paper. Then it is shoved on a tray between plates of brine and frozen. Other quick-freeze plants do tunnel-freezing, in which blasts of air 40 degrees below zero are blown against the food, which later is left in a holding room where the temperature is 15 degrees below zero. Men who work in these rooms wear heavy sheepskin coats, ear muffs and heavy underwear.

In 1943 the Army wants 71,000,000 pounds of frozen vegetables. From the canning industry the government will require an amount equal to 60 percent of the pack of 1942 -- a banner year. Only by utilizing every possible means for the recruitment of labor -- hiring women part-time or for the short peak periods in an area, by enrolling college women and business men -- can the industry cope with the gigantic task set out for it.

People who want to help their country and supplement their incomes by working in food processing will learn locally, particularly through newspapers and radio, exactly where and when to offer their services. In most cases the local office of the United States Employment Service will be responsible for recruiting cannery and other processing workers, and the county Agricultural Extension agent will be responsible for recruiting farm workers. Procedure will vary somewhat in different places, but these agencies will pull together in community mobilization.

ADVANCE RELEAS[illegible]
ADVANCE RELEASE
Howard - 72006

OFFICE OF WAR INFORMATION

W-167

WOMAN'S PAGE EDITOR: More and more women are facing the problem of preparing the evening meal for the family after a full day on a war job. And this meal must be nutritious and satisfying. This release outlines some of the short cuts in meal preparation approved by nutritionists and home economists of the U.S. Department of Agriculture.

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How long does it take a woman to prepare supper for the family? If she's a war worker who takes up her home job after an 8-hour trick on a production line or in an office, it probably takes far less time than it did in pre-war days. For one of the first things the homemaker-war-worker has discovered is that her leisurely pre-war methods were not only unnecessary but often resulted in less nutritious meals than those she now prepares using short cuts and streamlined methods.

With plenty of time on her hands she may have cooked foods more slowly than she does today; and quicker cooking holds in more of the vitamin content. She may have cooked her vegetables too long, well past the point of "just tender" which nutritionists advise. And undoubtedly she did cook most of her vegetables, though many are just as tasty raw and actually provide more vitamins and minerals than when cooked.

One trick many war workers are using is to cook up on Sunday enough food to last well into the middle of the week. A pot roast, for instance, or a pot of baked beans, or any of those other dishes which are just as good cold as hot and which also provide the makings for lunch box sandwiches either for the war worker or for the school children.

They've learned, too, that many foods can be cooked, either partially or wholly, during a mid-week evening, and quickly completed or re-heated for next night's supper. Stews are a good example.

When they cook potatoes, they cook twice as much as the family will eat at one meal. The remainder is then ready to make into potato cakes or puffs, or nourishing potato soup. Other vegetables - carrots, peas, beans and so on - cooked in extra quantities, can be used in a one-dish vegetable scallop which takes very little time to prepare when the vegetables are pre-cooked.

Slicing or dicing such vegetables as carrots, turnips and onions, or grating beets, shortens cooking time considerably. Panning vegetables, says Bureau of Human Nutrition and Home Economics, U.S. Department of Agriculture, is a quick top-of-stove way to cook many vegetables, and it holds the food value, too, since the vegetables are cooked in their own juices. Favorites for panning are cabbage, shredded in narrow strips; kale, stripped from the midribs; spinach; summer squash, cut in small pieces; okra with the pods sliced crosswise.

The system approved by Bureau of Human Nutrition and Home Economics is as follows: for each quart of prepared vegetables allow two tablespoons of fat. Melt the fat in a heavy, flat pan; add vegetable and cover to hold in the steam. Cook slowly until tender but not mushy, stirring occasionally. Season with salt and pepper before serving. Milk can be added if desired, first sifting flour lightly over the cooked vegetable to thicken the milk.

One of the biggest time and food value savers is serving vegetables raw. Cabbage, cut up for slaw, is one of the most usual ways. Raw carrots, eaten with salt like celery, are another favorite, and grated carrots make delicious salads or sandwich fillings. Not so well known are raw young turnips, cut in thin sticks and eaten with salt. Raw cauliflower, separated into its little bunches, can also be eaten this way. One way to conserve the vitamin C, the experts say, is to serve vegetables immediately after they are picked. Vitamin C disappears into thin air when vegetables stand.

Diced raw rutabaga, chopped raw green peppers and cold cooked potatoes make a quick and tasty salad, full of good vitamins and minerals. Raw chopped spinach and diced tomatoes make another. Shredded cabbage, chopped onion and chopped peanuts provide an interesting dish.

Egg dishes, such as omelets and baked eggs, are quick to prepare and can often take the place of meat in the menu.

Herbert - 2611
Nyburg - 75387

OFFICE OF WAR INFORMATION

For Immediate Release   W-169

WOMAN'S PAGE EDITOR: This semi-monthly round-up of Government orders and statements of interest to women covers the period from April 1 through April 15.

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FOOD

Prices that the housewife was to begin to pay the butcher on April 15 for BEEF, VEAL, LAMB, and MUTTON have been postponed one month. DRY ONIONS and WHITE POTATOES will cost more this summer, but more of them will be in grocery stores. The Office of Price Administration has allowed farmers to increase their maximum prices by 10 cents for these late crops.

Civilians will get a larger share of the FISH canned this year than they got from last year's pack, because the Government is taking less, but the amount each housewife will be able to buy may be about one quarter less than last year. The reason is that the amount left over from last year's supply is smaller. It is expected that 200,000 more cases of SALMON will be packed this year than last.

Each person will have about eight pounds of DRY BEANS to eat this year, about one pound more than was indicated at first when they were rationed. The increase is possible because dry beans are being brought in from Mexico and other countries. The Government has reserved more than half of the supplies of ry beans and DRY PEAS and SPLIT PEAS of certain classes.

Grocery stores will soon be stocked with the 31,000 tons of DRIED PRUNES and RAISINS that have been released by the Food Distribution Administration. CREAMED COTTAGE CHEESE and certain FARM CHEESE, both perishable and therefore unrationed, now cost three cents more a pound than before the Office of Price Administration allowed sellers to raise the prices to make up for increased costs.

Housewives will continue to pay about the same for PACKAGED SKIM MILK with which to bake bread and biscuits. The Office of Price Administration has set specific prices for it.

A larger number of FRUITS, VEGETABLES, JUICES, MEATS, FISH, and DAIRY PRODUCTS packed in glass will soon appear. Sufficient metal and rubber for closures are now thought to be available to permit the increase.

RATIONING

SAUSAGE, left to spoil because it was not being bought at a fast enough rate, has been reduced one to two points in ration value. The term sausage includes wieners, bologna, pork sausage, scrapple, chitterlings, and pork neck and backbones.

Housewives may be able to find bargains in terms of money as well as points when they shop for MEAT. Butchers have been forbidden to reduce points unless they cut prices at the same time.

Housewives need not spend ration stamps for RENDERING FATS and BONES, such as suet and rib bones, with which to feed animals.

FOOD DEMONSTRATION groups and EXPERIMENTAL KITCHENS will be granted allotments of rationed foods by the Office of Price Administration. The Office of Price Administration advises housewives to arrange a fair sharing of ration points with cooks, maids, and other HOUSEHOLD HELP who "eat in."

HOME CANNING

Housewives can get SUGAR for home canning in the same manner as last season. One pound is allowed for each four quarts of fruit and another pound in addition for each member of the family.

The War Production Board has asked home canners to get acquainted with a steel-saving glass-top CLOSURE now being produced in quantity for the first time in the United States, though it has long been the most popular type of sealing device among Canadian home canners. It will fit any standard home canning jar.

CLOTHES

More than a million pairs of women's and girls' SHOES are expected to be made from reptile leather as a result of the release of certain types of leather from inventories by the Office of Price Administration. Certain gold and silver colored leather may also be used under certain conditions, as well as natural colored retan leather.

Full-fashioned RAYON HOSIERY will be better made after May 15, when provisions are effective requiring greater use of stronger yarns, higher twist in yarns, closer knitting and better reinforcement.

WOOL FABRIC production reached an all-time high in 1942, says WPB. Production of woolen and worsted fabrics for women's clothing and general use attained 98 per cent of 1939.

GARDEN

GARDEN TOOLS should be sufficient in quantity and variety for essential needs, according to WPB. However, simplification eliminates about 700 unnecessary items saving approximately 1000 tons of steel a year.

VICTORY GARDENERS will be permitted short extension lines for watering their crops, says WPB, provided premises are already connected with water service and garden of edibles measures at least 5000 square feet.

HOUSEHOLD

ELECTRIC FAN REPLACEMENT PARTS will be available, WPB announces. To obtain a new part, a similar used part must be turned in to the dealer.

REFRIGERATORS, in limited quantities, will be available this spring, says WPB. The total number, mechanical and non-mechanical, will be about 400,000. There are no purchase restrictions on ice-boxes. But, to obtain a mechanical refrigerator, the purchaser must sign a certificate-of-need supplied by the dealer.

RADIO TUBES have been scarce in some areas, even though production is almost as high as in peacetime. By advising certain changes in manufacturing and distribution practice, WPB expects to correct this condition. Most tubes will be marked "M.R." meaning for maintainance and repair.

SALVAGE

HOUSEHOLD WASTE FATS collected during February reached a new high of almost seven million pounds. But WPB reminds housewives that this is less than 50 per cent of the quota. Save more fats.

American women have turned in over 888,000 pounds or approximately 18,000,000 pairs of discarded silk and nylon stockings during the first four months of the STOCKING SALVAGE CAMPAIGN.

MISCELLANEOUS

MISCELLANEOUS ITEMS NEEDING STEEL will soon be available in somewhat larger quantities. By recent order, WPB released fabricated steel parts for such articles as hair clamps, buckles, screen frames, awning frames; no new steel may be used for these items.

SIMPLIFIED FOOD SERVICE in many hotels and restaurants is resulting from the curtailed supply of vitrified china for commercial use. WPB says that more than half the current output of this durable china is going to the armed forces.

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ADVANCE RELEASE

ADVANCE RELEASE: For FRIDAY Papers, April 9, 1943.
Howard - 72006

OFFICE OF WAR INFORMATION

W-157

WOMAN'S PAGE EDITOR: Though the Government is placing controls over meat slaughterers and dealers, it is the ultimate consumer who can do most to wipe out the operations of the black markets in meat. This release points out what black markets are doing to meat supplies, prices and sanitation.

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Black market operations are threatening the maintenance of the nation's meat supply, jeopardizing the control of living costs and endangering the health of the people.

In January and February of this year, slaughter of cattle under Federal inspection was 9 per cent less than in those months of 1942, an amount equal to 80 million pounds of dressed meat. So serious has become this situation that Army buyers are finding it difficult to obtain all the amounts wanted for the armed forces, although they have secured adequate meat supplies at ceiling prices.

Black markets bring about an equally serious situation in civilian meat supplies. They have been one of the causes of local meat shortages which housewives have encountered over the last few months. They are one of the reasons why meat must be rationed; and, if they continue to operate, this ration will have to be lowered.

In 1943, civilians should have available 17,000,000,000 (seventeen billion) pounds of meat, as compared with the 16,300,000,000 (sixteen billion three hundred million) pounds available in the years 1935 to 1937. But if 20 per cent of the available supply finds its way into black markets, there will actually be procurable in the legal markets only 12,600,000,000 (twelve billion, six hundred million) pounds .. an amount considerably below the low standard of 1935-37.

Another bad aspect of these operations which further cuts the meat supply is the waste which occurs in black market slaughter. In most cases, only the choice cuts of the carcass are used. Ordinary cuts are thrown away, including the nutrition-filled variety meats -- the livers, kidneys, tongues and sweetbreads.

Black markets also menace the control of living costs. The only reason for black market operators to carry on their nefarious business is to make money... to cash in on the greater civilian demand for meat by mulcting the pocketbook of the housewife.

Black market prices run as high as the customer will pay. An average figure is from 10 to 35 per cent above authorized meat price ceilings. Figured on a basis of a legal 45-cents-a-pound price, black market meat costs from 50 to 60 cents a pound for the same grade. But this meat is not necessarily of the same grade as the legal market sells for 45 cents. Low or high grade makes no difference to the black market operator... when high grade meats are gone, he offers low grade at high grade prices.

Dollars-and-cents price ceilings to be placed on meat by Office of Price Administration will help the housewife determine whether or not she is paying black market prices. On pork, these go into effect April 1. Similar ceilings on beef, veal, lamb and mutton will follow very soon.

But even if the housewife were willing to pay higher prices to get the meat she wants, she courts danger to the health of the family by buying this kind of meat. Black market slaughtering frequently goes on under the most unsanitary conditions by the roadside in the dark of night, in deserted barns and vacant warehouses infested with rats; en route in dirty trucks or trailers.

The Government is now instituting controls on meat slaughterers and dealers which will help stamp out the black market, and the housewife, herself, can help rid the country of these criminals. Meat dealers are required to post the new ceiling prices where the customer can see them. If they are not posted, she should ask to see them. If they are not forthcoming, if the butcher appears to be ignorant about them or unwilling to discuss the matter, or if the charged price is above the ceiling, there is some reason for it, and that reason may well be black market.

In such a case the customer is advised to buy the meat, pay for it and demand a receipt. Every retailer is required by law to furnish such a receipt on request, showing his name, the date, the kind and amount of meat purchased and the price. This receipt should be taken to the local office of the War Price and Rationing Board.

Under the new rationing system it is inevitable that some black market operations will be forced out. But if a butcher offers to sell extra meat without the surrender of red ration stamps, this is another evidence that some of the meat which he sells has come from the black market. Such offers should also be reported to the War Price and Rationing Board.

ADVANCE RELEASE

ADVANCE RELEASE: FOR TUESDAY MORNING PAPERS, March 9, 1943.
Howard 72006

OFFICE OF WAR INFORMATION W-139

WOMAN'S PAGE EDITOR: Just a bit of timely advice, from you to your readers, on how to get the most out of War Ration Book Two.

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Millions of American women are settling down to some serious thinking today on the solution of the household's current Number One war problem: how to get the most out of 48 points a month. For a week's experience with War Ration Book Two has shown them that many of their meal planning, food buying and food using habits must be changed.

Three words give the answer: budget, substitute and save.

Budget Points Carefully

The simplest form of point budgeting is on a weekly basis -- the way the average size family, near to food markets, plans its meals. Families which are accustomed to buying more than a week's supply at a time, should make their point budget on the longer term basis.

To figure the family's weekly point allowance, multiply the 48 points by the number of persons in the family. (For a family of four, 192 points.) Divide that figure by the number of weeks in the month. (In March, 4½ weeks.) The result is the family's weekly point budget. (For the family of four, 42 2/3 points for each of four weeks and 21 1/3 points for the last half week.)

The next move is to list the point rationed foods and the quantities wanted for the week, with their point values, and to add up these points. If the list adds to fewer points than the family's weekly budget, everything on the list can be purchased. But if the point total exceeds the budget, then the second word of the three-word answer has to be used.

Substitute Other Foods

Substitute some canned foods of low point value for the higher point canned goods on the list. Pineapple and apricots, for instance, cost more points than any other canned fruit. Lima beans, peas and tomatoes cost more than other canned vegetables.

Substitute some of the dried vegetables for the canned or frozen ones on the too-high list. Dried peas and beans are valued at 8 points per pound as against 13 for canned peas and limas and 11 for canned green and wax. To be sure, these dried vegetables have to be used differently than the canned ones but they provide even more nutritive value to the diet. In addition, a pound of dried peas, for instance, will go much further when cooked than a pound of canned peas.

For canned soups, dehydrated soup mixtures can be substituted. In point value dehydrated soups are double that of canned soups -- 16 points per pound for dehydrated and 8 points per pound for canned. BUT, one pound of dehydrated soup provides much more than twice as much soup as a pound can, so it's a more economical point buy.

Simplest of all, substitute some fresh fruits or vegetables for the processed ones. Fresh ones cost no points at all!

Save All Leftovers

Saving every bit of leftovers from the supply of processed foods not only makes the points go further but helps out in the tremendous problem with which the country is faced -- feeding not only American armed forces and civilians but helping in the feeding of the other United Nations.

A half cup of leftover peas may not look like much to the family of four; but mixed with a half cup of carrots and other leftover vegetables will make a vegetable dish for another meal.

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Howard -- 72006
Nyburg -- 5430

OFFICE OF WAR INFORMATION

For Immediate Release

W-140

WOMAN'S PAGE EDITOR: This semi-monthly round-up of Government orders and statements of interest to women covers the two-week period ending February 28.

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FOOD

RABBIT MEAT: Current prices were lowered by the placing of price ceilings by Office of Price Administration. Top retail price for this delicacy is now 55 cents a pound.

BLACK MARKETS: OPA Administrator Prentiss Brown announces that in three weeks 420 individuals and firms were indicted, arrested, enjoined, or sued, for treble damage for operating black markets in meat.

CHEESE: Cheddar cheese has been exempted until June 1 from the recent price ceilings set on this and other foreign-type domestic cheeses.

ICE CREAM: A new pricing method for ice cream when the butterfat content is reduced more than 2½ per cent will pass on to ice cream eaters savings effected by manufacturers through their new formulas.

EGGS: Price ceilings recently established by the Office of Price Administration will lower the cost of eggs this spring in most stores but will result in a slight increase over the year.

MEAT: The United States is included among the United Nations on whose behalf the British Ministry of Food in 1943 will be the sole purchaser of meat from Argentina, Brazil, Paraguay, and Uruguay.

CANNED CHICKEN: Because of higher costs of ingredients, the price of canned chicken a la king and canned chicken-and-noodle dinner will be increased two to three cents per 12- to 16-ounce jar. The large 28- to 30-ounce jars of canned homestyle chicken will go up about 11 cents.

SAUERKRAUT: Consumers will be able to purchase a small supply of canned sauerkraut as WPB has revoked the order restricting its sale and delivery.

SALMON: Department of Agriculture has permitted salmon canners to sell for civilian distribution the remainder of their 1942 pack, amounting to about 50 million pounds.

FRESH VEGETABLES: Price control has been extended recently to include lettuce, spinach, tomatoes, snapbeans, carrots, cabbage, peas, advises Office of Price Administration. White potatoes and onions were already under control.

CANNED VEGETABLES: Supplies for civilians from next summer's estimated pack will be increased by about 10 million cases, according to Department of Agriculture. Most of the increase will be on tomatoes and snap beans.

RATIONING

CANNED MEAT: Canned chicken meat, canned turkey meat, and other canned poultry meat are not included in the freeze on sales of canned meat, Office of Price Administration points out.

PASSENGER CARS: Twenty-two occupations have been listed by the Office of Price Administration as eligible for rationed automobiles.

TIRES: Reclaimed rubber tires for passenger cars, called "war" tires, have been reserved for replacements on cars with a mileage ration of over 560 monthly, announces Office of Price Administration.

RECAPS: Passenger car owners using tires smaller than 7.50 x 20 can now get casings recapped with reclaimed rubber camelback without applying to their War Price and Rationing Boards.

BABY FOODS: Ration stamps must be surrendered for these even when purchased in drug stores, says Office of Price Administration.

POINT RATIONING: To help housewives in their purchases of processed ration foods, Office of Price Administration has provided an "over-lap" period at the end of each month when stamps for the present and second periods may be used.

MILEAGE: Provision has been made by Office of Price Administration for enabling those who drive to and from work to get additional mileage ration if the B ration book is insufficient for their needs. Applicants must prove that their driving is to and from work, that a ride-sharing arrangement has been made and that there is no other means of transportation.

CLOTHING

SHOES: "Play" shoes and certain other types not ordinarily worn on the street and all baby shoes up to size 4 have been removed from rationing.

SHIRTS, PAJAMAS: Reductions of 5 to 25 cents a garment may be expected to result from the simplification of boys' and men's shirts and pajamas made according to the new WPB specifications, says OPA.

HOSIERY: The practice of some stores of offering merchandise, particularly nylon hosiery, for sale only on condition that purchasers buy War Savings Bonds is illegal, according to Office of Price Administration. The Treasury Department also disapproves this practice.

KNIT UNDERWEAR: Styles and fabrics in men's, women's and children's knit underwear will be simplified by WPB order. The object of the order is to save material, facilities, and manpower by reducing practices wasteful in wartime. There will still be adequate types, sizes, and quantities for all reasonable needs.

WOOL CLOTHING: Wool quotas allocated for essential civilian goods have been doubled by WPB to further assure an adequate supply of wool clothing for next fall and winter.

SHOE PRODUCTION: To protect consumers against possible shifting of shoe production into high period lines, shoe manufacturers are prohibited, by WPB order, from producing more shoes in any price line than were made by them prior to the shoe rationing program.

HOUSEHOLD ITEMS

MATCHES: WPB's action shortening the length of matches by 1/16 to ¼ of an inch will conserve seven million board feet of lumber in 1943.

WOOD FURNITURE: New patterns for wood furniture have been prohibited as of March 15, and existing patterns will be reduced approximately 2/3 on July 1 by a recent WPB regulation.

CHLORINE: Chlorine is still available for its many household cleaning uses but in reduced quantities because of increased military needs in synthetic rubber, explosives, anti-freeze, says WPB.

HOUSEHOLD ARTICLES: Two million tons of critical metals and ~~enormous tonnage~~ of other essential materials were saved during last year by restrictions and curtailments of hundreds of civilian household articles such as clocks, bedding, cutlery, electrical appliances, cooking utensils -- WPB announces.

WAXED PAPER: Metal may no longer be used for cutting edges on boxes for waxed paper household rolls, and such rolls are limited in width to 12 inches by WPB regulation.

BICYCLES: Used bicycles will be cheaper after a regulation to be issued shortly by Office of Price Administration.

FUEL WOOD: Plan now for next year's supply of fuelwood, warns Department of Agriculture. Critical fuel shortages are likely to exist next year, and fuelwood requires from 6 to 12 months for seasoning.

LAUNDRY: Ceiling prices on services supplied by power laundries have been established by Office of Price Administration in three New England areas, and similar action will follow in other parts of the country.

COAL: Persons planning to convert heating plants to coal from some other fuel should arrange to secure their coal supply before starting conversion, warns the Office of Solid Fuels Coordinator for War. Certain coals are growing difficult to obtain.

MISCELLANEOUS

FARM VOLUNTEERS: Well over half a million Victory Farm Volunteers will be recruited from non-farm youth for farm work during the spring and summer, according to Secretary Wickard. Most of these will come from the nation's high schools, enlisting from the ranks of the High School Victory Corps.

LEND LEASE: Almost three million tons of war supplies have been shipped to Russia, according to Lend-Lease Administrator Stettinius. And over 50,000 tons of raw materials already have been delivered from North Africa to Great Britain and the United States.

CIVILIAN SUPPLY: Retailers' stocks of clothing and textile house furnishings at the beginning of 1943 were largest of any similar period in the last five years, according to WPB announcement.

UNITED STATES MARITIME COMMISSION

Washington 25, D. C.

November 26, 1943

To All Regional Directors of Construction:

Subject: Plant Feeding Policy

References: (a) Memorandum dated October 23, 1943, from Mr. Daniel S. Ring to the United States Maritime Commission, approved by the Commission on October 28, 1943.

(b) Report dated September 27, 1943, from Mr. H. D. Willis to Mr. Daniel S. Ring.

The Maritime Commission, upon reconsideration, feels that to put into operation at the present time recommendation VI in reference (a), quoted below, would be inadvisable and impractical.

> "That the Commission advise management that, in cold or intemperate climates, when management determines that a break in the morning or afternoon of the day shift and similar breaks for the other shifts for hot coffee will expedite production, authorization for such arrangement will be given."

The Commission, therefore, rescinds the approval, given on October 28, 1943, to recommendation VI in reference (a), but the approval of all other parts of reference (a) remains effective.

The action taken by the Commission with respect to the above quoted paragraph also affects paragraph 3 of the recommendation submitted by Mr. Willis to the undersigned which reads as follows:

> "Set aside ten or fifteen minutes in between meals for a snack or a pick-up. During cold weather, a hot drink, such as a cup of coffee acts as a stimulant to an out-door worker."

Please transmit this information immediately to the shipyards holding Maritime Commission contracts in your area.

(Sgd.) DANIEL S. RING
Daniel S. Ring
Director
Division of Shipyard Labor Relations

UNITED STATES MARITIME COMMISSION

INTER-OFFICE MEMORANDUM

October 23, 1943

To: United States Maritime Commission

From: Director, Division of Shipyard Labor Relations

Subject: Plant Feeding Policy

As I advised the Commissioners and the Executive Director by individual communication on September 28, 1943, I have transmitted to our Regional Directors of Construction and to contractors a report on problems surrounding the feeding of employees in shipyards, prepared by Mr. Horace D. Willis, our consultant in this matter, and have received from them comments on and criticisms of the same. I had intended to incorporate all of the criticisms and statements in this report, but find that it would make it very voluminous, so while I am retaining the same for inspection and detailed examination if the Commission desires, I felt it best to summarize the findings in this memorandum and present the recommendations that follow.

From the report by Mr. Willis and the comments received concerning it, the following conclusions are justified:

1. Each yard presents a distinct and separate problem. This results from the following factors:

(a) Size of the yard
(b) Its location and climate
(c) Extent of existing facilities
(d) Availability of space for expansion
(e) Living conditions of workers, specifically touching the problem as to whether a large precentage are living at home or not
(f) Plant policy

2. The extent of participation of the Commission in the solution of this problem, upon the present basis of facts, indicates that its efforts should be limited to providing or securing adequate facilities, but the Commission should not undertake to operate the same.

3. Operation of the facilities should be established on a basis whereby as great an authority and responsibility as is feasible and practicable is extended to a workers' feeding committee, which will keep in close touch with the operation and any grievances arising therefrom, but whose actions will also be subject to review and supervision by a more general committee in each yard composed of a representative of the Commission, a representative of yard management, a representative of the medical department of the yard and a representative of labor (independent of the representatives who may be designated on the feeding committee).

The fact that labor's feeding committee, if set up, should be in direct contact with the operation should not raise the implication that contract management is in any sense definitely out of the picture.

Purely cooperative ventures have been found unsuccessful, through lack of experience or failure to employ experienced management in such ventures, and this peril to the success of the operation should be constantly kept in mind.

4. Preliminary and exploratory conferences with representatives of the Federal Works Agency indicate that it may be possible to procure from that Agency definite cooperation insofar as providing facilities and operating the same are concerned.

The most practicable method of securing such cooperation appears to be by setting up of Federal Works projects in plants for which the same appear desirable.

Thus, after representatives of the Commission, the plant management and the collective bargaining agency in such plant decide upon a particular plan which seems appropriate for a project under the Lanham Act, a speedy method of transmitting and processing the application for such project should be provided.

5. The data developed by the survey made by Mr. Willis should be made available to all interested parties for the purpose of informing them of his findings, but without binding any yard to adopt the recommendations; in other words, the data should be presented as advisory and not mandatory.

6. Because of the pressing nature of the problem, the first experiments should be carried on in the San Francisco Bay area for the benefit of the experience gained there, and the results should be made available to all other shipyards.

This should not preclude any move in any other area, however, if the same is found to be urgent and pressing.

7. The control of this program should follow the same general pattern now in existence; namely, it should be vested in the Regional Offices of Construction for administration in accordance with Commission policy, with the Commission's plant engineers and industrial relations advisors given joint and immediate administrative responsibility in the matter, to the extent defined by the Commission's policy on plant feeding.

RECOMMENDATIONS:

On the basis of the study that has been made and these conclusions, it is recommended that the following plan be adopted by the Commission:

I. That the Commission announce to management and labor its readiness to secure or provide needed facilities for the type of feeding found most practical for each yard involved, on the basis of a study of each yard's individual needs.

II. That the Commission announce the desirability of an early agreement between management, labor and the Commission's representative in each yard on a specific plan for feeding in the yard. Such a plan should result from active participation by the plant engineer, the director of the yard's medical department, the industrial relations consultant at the plant and the industrial relations advisor, or his representative, in the region.

III. That the Commission announce that such plan should include an offer of the opportunity to labor to maintain immediate and direct contact in the operation of the needed facilities (as outlined in paragraph 3 of the conclusions above) on a basis which will benefit and not hinder production.

IV. That when such plans are approved, facilities allotments be sought and made in accordance with normal procedure for any facilities allotments, or in the alternative, if Federal Works Agency participation is indicated, that Admiral Vickery be authorized to make such application and do all other necessary things to process and complete the same for and on behalf of the Commission.

V. That the Commission definitely point out the imperative need for expedition of this program.

VI. That the Commission advise management, that, in cold or intemperate climates, when management determines that a break in the morning or afternoon of the day shift and similar breaks for the other shifts for hot coffee will expedite production, authorization for such arrangement will be given.

VII. That the Division of Shipyard Labor Relations be authorized to observe and report on progress of the various plans, to the end that Commission policy in respect to the subject matter may be revised or amplified if and when circumstances indicate the necessity therefor.

Approved:

(Sgd.) H. L. VICKERY
H. L. Vickery
Commissioner

(Sgd.) DANIEL S. RING
Daniel S. Ring
Director
Division of Shipyard Labor Relations

Approved by the Commission 10/28/43

(Sgd.) A. J. WILLIAMS
Secretary

ADVANCE ADVANCE ADVANCE

UNITED STATES MARITIME COMMISSION

Washington PR 1647

ADVANCE RELEASE FOR A.M. PAPERS OF NOVEMBER 8, 1943

Definite steps to provide better food and feeding facilities for shipyard workers on their jobs are being taken, the Maritime Commission announced today. The program has the double object of improving the health of the men and women who are building the Nation's Victory Fleet and accelerating the already record-breaking ship production rate, it was stated.

The Commission's action followed a nationwide study and report by its Division of Shipyard Labor Relations, which disclosed that a number of shipyards do not have adequate feeding facilities for the workers. The plan assures management and labor of the Commission's readiness to provide all needed facilities for the type of feeding found most practical for each yard's individual needs. Full consideration will be given to size of plant, climate, living conditions, and existing facilities. In colder climates a mid morning or afternoon break may be reflected in increased production.

The Commission urges that an early agreement be reached between management, labor and the Commission's representative in each yard on a specific plan for feeding in the yard. Feeding plans will be made through the active participation of the plant engineer, the director of the yard's medical department, and the industrial relations advisor, or his representative, in the region.

The Commission's plan includes an opportunity for labor to maintain immediate and direct contact in the operation of the feeding accommodations on a basis which will benefit workers and increase production.

Operation of the contemplated new facilities is to be established on a basis whereby as great authority and responsibility as is feasible and practicable is extended to a workers' feeding committee. The committee is to keep in close touch with the operation, which is subject to review and supervision by a more general committee in each yard composed of representatives of the Commission, yard management, yard medical department, and a labor group independent of those designated on the feeding committee.

The lack of adequate feeding facilities in many shipyards was found by the investigators to be not only a direct and immediate cause of absenteeism but also a definite contributing factor in unfavorable labor turnover rates. Medical opinion indicates that reduced vitality resulting from inadequate feeding directly lowered the production ability of the workers.

Women workers, already more than 12 per cent of the total, employed in merchant shipbuilding, as burners, welders, "tackers," riveters and in dozens of other shipyard tasks will benefit greatly from the better feeding facilities.

Because of particularly pressing need in the San Francisco Bay area, action on the stepped-up feeding program will first be taken in the shipyards there, Experience gained in those yards, the Commission believes, will benefit projected similar operations elsewhere.

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From BULLETIN
Federal Security Agency Community War Services
and War Manpower Commission
Vol. 2 No. 25, Nov. 8, 1943

Dr. Robt Goodhart
Agri. Ex 3097

FEDERAL AGENCIES TO COOPERATE ON INDUSTRIAL FEEDING PROGRAM

The War Food Administration has announced an expansion of its industrial feeding program with the formation of an Inter-Agency Committee which includes representatives of the War Food Administration, War Production Board, Office of Price Administration, and War Manpower Commission.

The industrial feeding program, as approved by the Inter-Agency Committee on Food for Workers, includes:

1. Provision of materials, equipment and operating supplies needed for the feeding program. This involves the full use of secondhand and installed equipment.

2. Adjustment of manpower demands for food services and for production of necessary materials, equipment and operating supplies; stabilization of employment in and training of employees for restaurants and in-plant food services where necessary.

3. Nutrition education conducted on a national scale as an integral part of the war food program, enlisting the cooperation of all federal agencies concerned, State and local government agencies and nutrition committees, labor, management, professional and trade groups, at all levels. Nutrition education to be conducted in all war plants and integrated with in-plant food service.

4. The establishment of food service standards to conserve food, equipment and manpower. Maintenance of prices of prepared food at reasonable levels.

Plans are under way to set up similar Inter-agency Committees on regional and local levels.

N. Y. Times Nov. 6, 1943

NEW FOOD SERVICE ASKED FOR WOMEN --

MRS. DOROTHY ROOSEVELT SPONSORS CARRY-OUT SYSTEM TO SAVE WORKERS' TIME

Special to the N. Y. T.

Washington, Nov. 5, Mrs. Dorothy Roosevelt, specialist on Women's problems in war industries for WPB in the Detroit area, and the only woman holding such a title in the country, today urged a prepared food for carry-out service for women war workers such as has been successfully carried on by a Detroit food company in twenty-one stores of that city.

"If we can set such a program up on a mass basis, we figure we are going to save a woman three hours a day, a minimum for shopping and preparing and cooking food," she said.

The carry-out line thus far worked out includes such items as macaroni and cheese, spaghetti, chile con carne, codfish balls, chicken a la king, chicken pies, potato salad and creamed spinach. In Detroit, she says, the demand for these articles, once introduced has been steady.

Mrs. Roosevelt, former wife of the late Hall Roosevelt, is visiting her sister-in-law, Mrs. Franklin D. Roosevelt in the White House and is looking into some of the complications which lie ahead of a large-scale carry-out system. Paper for containers and copper for refrigeration counters are two of the hard things to come by. A carry-out package to be worked out by one of the big food companies is another idea which she is investigating. Such a plan would entail permission from the Army to make such rations, now used exclusively for soldiers, permission from the WPB to use tins, and enough ration points from OPA to cover the meat content.

All these problems are a part of Mrs. Roosevelt's unique job, which she summarized somewhat as follows: she works in the Office of Labor Production of WPB, which was asked for by unions, so that her appointment entailed endorsement from both the AFL and the CIO. It is thus an office which "concerns itself with the people in production rather than with the materials in production," and here is the Women's field in an area of a tremendous number of women workers. She has help from an advisory committee of fifteen women, from management, from the CIO, from the AFL, and from the various Governmental agencies concerned with women in industry, such as child-care agencies, recruitment agencies and the Women's Bureau.

Erickson
Wright
Anderson
O'Connor
Sater

Ziegler
Lowrie
Webb
Wolfe
Smalty

new regional set up

WAR FOOD ADMINISTRATION
FOOD DISTRIBUTION ADMINISTRATION

November 1943

INDUSTRIAL FEEDING PROGRAM

The objective of the Industrial Feeding Program is to provide the food needed by industrial workers to assure the highest efficiency in production. The program is based on recognition of the need for supplying sufficient amounts of food in the proper variety to meet physiological requirements of workers, and agreement that, in general, such requirements can be met through the medium of industrial food services and of commercial restaurants located in the vicinity of industrial plants.

The need for expansion of the Industrial Feeding Program is indicated by the frequent lack of adequate community restaurants and food shopping services, the frequently unsatisfactory home food preparation facilities for industrial workers, the increasing employment of women in industry, and problems of food distribution.

The Food Distribution Administration is responsible for coordinating activities of Federal Agencies relating to the Industrial Feeding Program. Coordination is accomplished through the medium of the Inter-Agency Committee on Food for Workers, which includes representatives of War Food Administration, War Production Board, War Manpower Commission, Office of Price Administration, and the Maritime Commission, and by direct contact with other Federal agencies.

Advice on in-plant feeding is provided through the five regional offices of the Food Distribution Administration. This includes advice on the various types of food services, such as cafeterias, canteens, lunch counters, and packed lunches; menu suggestions, and nutrition education programs for workers. Assistance is provided in obtaining necessary food preparation and service equipment, food supplies, and personnel.

Programs including courses, demonstrations, food marketing tips, cooperation with managers of public restaurants, and boarding houses are being conducted by many State, county and community nutrition committees cooperating with the National Nutrition Program. Pamphlets, posters, and monthly releases for plant magazines are available to labor groups and management.

Requests for assistance in the organization and operation of industrial food services, or for nutrition education materials, should be addressed to the proper Food Distribution Administration regional office as indicated below.

Northeast Region, FDA, 150 Broadway, New York 7, N. Y.
    Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia
Southern Region, FDA, Corner Marietta and Forsyth Streets, Atlanta 3, Ga.
    Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia
Midwest Region, FDA, 5 South Wabash Avenue, Chicago 3, Ill.
    Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin
Southwest Region, FDA, 425 Wilson Building, Dallas 1, Tex.
    Arkansas, Colorado, Kansas, Louisiana, New Mexico, Oklahoma, Texas
Western Region, FDA, 821 Market Street, San Francisco, Calif.
    Arizona, California, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming, Territory of Hawaii.

Miss Robinson

Copy

October 28, 1943

To: Norman Gold, Chief of the Civilian Food Requirements
Division, Food Distribution Administration

From: Mordecai Ezekiel, Economic Adviser to the Secretary

Subject: Food Facilities for Women Workers

Absenteeism and heavy labor turnover are increasingly difficult problems in war industry centers. This is aggravated by the increasing dependence on women workers, who now compose over half the civilian working force. In many war plants, half the women are married. Household difficulties are major reasons for the heavy absenteeism and high turnover rates among women. (Note attached exhibit.)

Under present conditions, working mothers must (a) work full hours in war plants, (b) spend more hours getting to and from jobs, (c) spend long hours shopping in crowded stores, and (d) spend hours on home duties, largely preparing meals. This memorandum puts in writing some of the ideas we discussed yesterday, after Mr. Blumberg checked them with Holland and Davenport.

If the Nation really needs them as workers, it must take steps which will reduce the excessive burdens which now limit their effectiveness as workers. Efforts toward this end already include (a) provision for aid in daytime child care, both in nursery schools and after-school child care, (b) provision for school lunches for children, and (c) provision for in-plant feeding. The one area where little has been done is in relieving the burden of buying food and preparing meals for themselves and their families for the morning and evening meals.

My suggestion here is that, in addition to accelerating the efforts already underway, we try to see what can be done, in cooperation with local business and community leadership, to provide means by which women war workers can buy the food for themselves and their families ready-cooked and ready to eat, at a cost which makes it possible for those who care to do so to buy their food this way a large part of the time.

Since over-all adequacy of food is not a problem for the families of most women workers, under present ample U. S. supplies and rations, it is suggested that O.P.A. be requested to authorize the establishment of "American War Workers' Cafeteria," under the following conditions:

(1) Only working women and their families will be permitted to patronize them.

(2) Ration stamps will be collected for meals, and will be used by the restaurants to acquire food. They will not share in present restaurant food allocations.

(3) Meals offered will be adequate nutritionally, under standards

established jointly by OPA and WFA, and will be sold at OPA-approved ceiling prices. (Something like 25¢ for breakfast, 40¢ for lunch and 50¢ for supper.)

(4) Restaurants will be located in workers' areas not adequately supplied with eating places to meet demands at these prices.

Private restaurants could operate as part of this program wherever they were willing to meet the conditions.

This program might be greatly speeded up by using the existing school lunch facilities as feeding centers, perhaps under Parent-Teachers' Associations or other local community sponsorship. In plants operating on single shifts, in-plant facilities might also be used for these purposes.

The program might be set up so as to provide both pre-cooked meals, to be carried home and eaten there, and regular cafeteria or restaurant facilities. In-plant feeding facilities especially might be used to prepare pre-cooked suppers which could be carried home by workers at the end of their shifts. Apparently commercial restaurants would not oppose pre-cooked meals as much as full meal service. Opposition may also be expected from retail stores. In congested defense communities where both stores and restaurants are overcrowded and unable to provide adequate service, it might be possible to develop services of this sort without too much opposition from commercial interests.

The appendix summarizes some of the facts showing the need for action to reduce the burden on women workers.

Exhibit on Basic Facts

1. Employment of men is going down; employment of women is generally up but slipping off in recent months. Non-agricultural employment in millions of workers is as follows:

	July 1940	July 1942	Sept. 1943
Men.	27.0	30.2	26.7
Women.	9.8	12.1	14.5
% of workers women	27	29	35

The flow of women into war industries is especially large. Considering women factory workers only, in the airframe industry the increase is from less than 4,000 to over 250,000; in the shipbuilding industry, it is from practically zero to over 100,000.

A study of 35 war plants indicates that in the first eight months of 1943, on the average, half of the women then employed were married. Where there were approximately 1 million married women factory workers before the war, there are now more than 2 million.

2. As a result, separations and absenteeism are increasing since they are most prevalent among women. A study by the Women's Bureau of 5 war plants indicates that approximately one-fifth of the absences and separations of women can be accounted for by home obligations, another fifth by illness, and the remaining three-fifths by a large number of other reasons. Another study by this same group covered 42 war industry plants in 17 states which employed approximately 70,000 women. Each plant reported the major reasons for women's separations. Half of the separations were due to home obligations, one-eighth to illness, while the remaining three-eighths were due to a variety of other reasons.

3. The character of the breakfasts eaten by women war workers is indicated by a survey just completed at Peoria, Illinois, and Evansville, Indiana. It agrees with other similar surveys made in the Northwest and in Canada. Customarily one-fifth have no breakfast or just coffee, another fifth take fruit or juice, more than another fifth have some protein food but no fruit or juice, while the balance, less than two-fifths, have reasonable breakfasts. In a West Coast plant, 293 workers were surveyed and it was found that 84% of the women factory workers were eating poor breakfasts, while 40% of the men had insufficient breakfasts.

In the same West Coast plant, 62% of the women workers who ate in the cafeteria were not eating a good lunch, while of those who brought packed lunches, 92% were inadequate. This poor lunch situation is confirmed by a Women's Bureau survey of 183 plants. It indicates that 14% allowed less than 30 minutes for lunch. In crowded war plants, a half hour is insufficient time to get to an eating place, stand in a long cafeteria line, and to eat a proper meal. These facts indicate the need for at least a good hot nutritious dinner.

4. The attitude of workers toward getting their heavy meal through the plant cafeteria or similar restaurant facilities is indicated by the response of war workers in two plants on the reason they eat in the cafeteria. Of the reasons given, 56% in one plant and 67% in the other were "plant meals are excellent." Similarly, 63% and 37% of the reasons were "Like hot meals, packed lunch isn't as good." In three other plants that did not have cafeterias, 65%, 65% and 86%, respectively, of the workers said they would like one installed.

In Peoria, one-quarter of the war workers already are eating one or more meals per week in a restaurant; while in Evansville, two-fifths of the workers eat dinner out this much. Reasons for eating in restaurants like "Too tired to cook, want to relax." "No one has time to cook". "Hours of work are irregular" account for one-fifth of the restaurant eating in Evansville and about one-tenth in Peoria. Ordinarily, restaurants provide food only for occasional special meals, while prevailing prices make regular dependence on existing restaurant facilities too expensive for most families. Served hot dinners are thus a solution to the war nutrition problem already resorted to by some war workers.

Ltr from [illegible] Robinson
([illegible])
Women [illegible] Plants

July 27, 1943

Memorandum:
To: Mr. Fitzgerald, Office of the Secretary
From: Mary V. Robinson, Women's Bureau
In re: I attach the memorandum on food facilitis for women workers in war plants, for which you asked.

July 27, 1943

U. S. DEPARTMENT OF LABOR
WOMEN'S BUREAU
Washington

FOOD FACILITIES IN WAR PLANTS

With the increasing pressure for sustained effort to achieve high production rates day after day, week after week, month after month, emphasis on nutrition and health is more necessary now than at any previous time. The importance to war production of an unbroken lunch period of 30 minutes, and of hot nutritious food, or at least a hot drink, at lunch time in a clean and convenient place away from the job can not be too strongly stressed. A type of cafeteria that serves the purpose well in one plant may not be feasible in another, but something more than a counter with candy, cake, and coke — too often the only arrangement — should be available.

The food situation varies exceedingly from plant to plant as is revealed by the following data:

1. A survey of selected war industry plants in various parts of the country:

   191 plants were visited employing 1,250,000 productive workers, of whom 293,000 were women.

   These plants represent over 20 key war industries, scattered in 36 States.

   Of 177 plants reporting on type of food facilities —
      Three-fifths had a cafeteria or mobile canteen;
      A little over a tenth had lunch counters only;
      A little over a tenth had plant box lunches or sandwiches, drinks, etc. brought into the plant;
      A little less than a fifth had no food available in the plant;
      In several instances the situation varied for the workers, where a cafeteria was too inconveniently located for some of the women to use, or if a cafeteria or lunch counter was not open for the second and third shifts;
      Some plants have outstandingly satisfactory provisions with inexpensive, well-balanced and nutritious meals, attractive and well-run lunch rooms, or electrically heated rolling ovens run into the plant at lunch time.

The inadequate facilities in other plants mean that --

Thousands of war workers have no hot food during working hours;
Thousands eat in the open, exposed to all weather variations;
Thousands eat in insanitary restrooms.

2. A survey of Women Workers in Some Expanding Wartime Industries --

New Jersey -- 1942:

Of the 137 plants scheduled --

Over a half (73) provided nothing in the way of lunchroom facilites or food
More than a tenth of all had only space with tables and chairs, but no food
Only 48 (just over a third) had provisions for food

Of these 48 --
30 had cafeterias and restaurants serving a variety of foods
9 had lunch counters, food bars, and canteens
9 -- arrangements could be made with vendors for box lunches.

No firm with fewer than 750 workers maintained a cafeteria, or restaurant, and only 4 of the 30 with cafeterias had fewer than 1000 employees.

Though no evaluation was made of the food service given at several of the lunch counters and canteens, little more than a snack -- a bit of pastry, a candy bar, or a soft drink -- could be purchased, and management assumed no responsibility for the adequacy and quality of such food supply. Some firms furnished coffee free of charge.

Neither were all the cafeteria arrangements perfect. Workshops in some cases were too remote for employees to make use of the cafeteria service in the short time allowed for lunch; others were too expensive; some were too small to take care of the large numbers, even by staggering the lunch periods. A few apparently catered only to office and supervisory help, so were avoided by the production workers.

On the other hand, some firms convinced of the dependence of efficient production on proper nourishment, made every effort to serve good and appetizing food. In addition to central cafeterias a few large firms had service to the workroom. One firm, for example, had a large, attractive, cool cafeteria with excellent and cheap food available for all shifts. Another firm with a more or less similar arrangement operated its food service at cost, with a resulting deficit, but felt the results were worth the loss.

Some employees objected to the second and third shifts because they could buy no food in the plant.

In plants with no lunchroom conveniences, thousands brought lunches from home and for the most part ate at their work benches, many of which were dirty and dusty. For the majority the only other arrangement was eating in the dressing room, in the crowded washroom, in a corner of the toilet room.

26 of the firms allowed an hour for lunch so that workers could go home or to a nearby restaurant or drugstore.

Fully aware of their shortcomings, more than one manager discussed the lack of food facilities and their plans for future improvements. They expected to have "better facilities ready by fall," or said, "We plan to have a cafeteria in our new building." Difficulty in obtaining equipment was a serious obstacle.

July 1943

Nutritious Lunches A "Must" to Maintain Workers' Health

A minimum of 30 minutes for lunch, a meal that includes hot, nutritious foods at a reasonable price and a pleasant place to eat away from the workroom. These, according to the Women's Bureau, are standards that must be achieved in order to maintain the health of women in war plants.

A recent Women's Bureau survey of 183 war plants shows that tens of thousands of workers do not have hot food during working hours, other thousands snatch their lunch in 15 minutes and eat in the open, exposed to all weather, or in unsanitary rest rooms. As a result, a noticable work lag and absenteeism has been noted in many factories.

Although many plants, especially those immense ones built since 1940, meet every requirement of the bureau, many others are hampered by shortages that make proper feeding of employees impracticable. Employees, on the other hand, often find it impossible to bring food from home.

The solution, says Secretary of Labor Perkins, is for labor and management to take the initiative in working out an answer in order to maintain the health of our labor force.

Book Review

The Airplane and Tomorrow's World by Waldemar Kaempffert; a Public Affairs pamphlet: 10 cents.

This little thirty-page book by the science editor of the New York Times describes a new world with all the barriers removed. Tomorrow's planes will probably be at least twice the size of today's monster bombers, and no city on earth will be more than 48 hours away from any other city. The obstacles of sea and mountain and desert will be largely overcome. Flying makes the most remote countries our next door neighbors.

Into this picture of direct communication, with its accompanying direct exchange of cultures, is injected the problem of whether the nations of the world will insist on their sovereign rights. If political, military and economic problems are to be settled along the old nationalistic lines the exploitation of backward countries will inevitably continue in the old imperialistic pattern, Mr. Kaempffert says. The new markets of the world will belong to the rich nations that can afford to exploit them.

Mr. Kaempffert sees the only answer in international control of flying, free exchange of patents and new discoveries, as is now done with most scientific research, and world disarmament. World unity has long been both a vision and an issue, but with the advance of the airplane it is an issue that can no longer be evaded. As long as airplanes can be quickly converted to carry bombs, and as long as nations cling tenaciously to nationalism and frontiers and to huge military establishments, the newest and greatest means of international understanding and goodwill will be just another means of potential danger.

Organization for NWF Reaches 85 Per Cent

The country-wide goal of the National War Fund has now been accepted by 85 per cent of the state groups. State and local war chest organization is proceeding so rapidly that 25 per cent of the total NWF setup has already been arranged despite the fact that the campaign does not start until October 1.

WOMEN'S BUREAU
AUG 7 1943
DEPT. OF LABOR

Around USO Clubs

Baltimore, Md., has had a comparatively new group added to the many it already serves—the French Navy. Rounding up junior hostesses to entertain the sailors in French has not always been easy, but thanks to the adaptability of youth and the sign language, things seem to have worked very well. Food will often bridge the gap when language fails. The all-American favorite, the hot dog, was introduced to many of the French guests and, as usual, with complete success. "The dog hot, c'est bon," is the way the sailors put it.

Wichita Falls, Tex., sends the following description of the office of the Negro club during renovations: "With one telephone between two desks (and only five feet of cord), a juke box, empty coca cola cases and full ones towering on both sides of the desk, boxes of supplies all about our feet, four tables of card players, meetings going on in every corner and each group trying to be heard, this place is truly bedlam."

Little Rock, Ark., has learned again the old story that if you like it, it's fun. One night the director was struggling late over her financial report, trying to locate a missing four cents. Finally she asked for help from a volunteer—only to be overheard by a soldier who was a C.P.A. in civilian life and dying to get at some figures again. That night he worked over her accounts until closing time; the next night he brought along another C.P.A. It was late before the final totals fell into place. Over midnight coffee the soldier let it be known that the two nights spent on that 4-cent search were the happiest he had had in the Army and he asked if he couldn't keep the club's books as long as he was in town.

Jeffersonville, Ind., was in the midst of a recent canning demonstration when a blue uniform appeared in the doorway for a moment and then disappeared. Someone went after him and brought him back. He turned out to be a British petty officer homesick, of all things, for a river. He was taken out to a beautiful spot on the Ohio where he spent an hour or so just looking at the rushing water. When he came back to the club he found a group of high school boys and girls dancing. One of the girls took him under her wing. She invited him to her home for pot luck supper and believe it or not, there was turkey. The next day the two went off to Churchill Downs, across the river in Kentucky, to see the races. Luck was still crowding our young Englishman. He won enough money on the horses for a bang-up dinner in Louisville to repay his hostess in some measure for the wonderful time he had had.

Denver, Colo. Bright spot in a busy day: The soldier who was searching frantically for an electric train for his son who, at the moment, was three weeks old.

Childersburg, Ala., has trained its junior hostesses so well in the fine art of southern hospitality that the town wonders if it hasn't gone a bit too far. The trouble was that the railroad station could be seen from the windows of the high school. When soldiers got off a train the girls could spot them from the school. They would then make a beeline for the USO club to be on hand to greet their uniformed guests. So a new ruling had to be made to keep the girls from cutting the last two periods of school. Now no high school lass is allowed in the club until school is out.

USO DIRECTORY

Operations Under the Direction of the National Board YWCA—List of Staff and Locations by FSA Regions

JULY 15, 1943 Dir.: Director: N. Dir.: Negro Director

F.S.A. REGION I—

- **Connecticut**
  - Bridgeport
    - Marion D. Green, *Dir.*
    - Rose Dworski, *Asst.*
  - Bridgeport—Stratford
    - Leah Wilson, *Asst.*
  - New London
    - Mrs. Doris Champlin, *Dir.*
- **Maine**
  - Portland
    - Anne Kneuer, *Dir.*
- **Massachusetts**
  - Ayer
    - Mrs. Virginia Barry, *Dir.*
    - Alice Kramer, *Asst.*
  - Chicopee Falls
    - Dorothy Jaxheimer, *Dir.*
  - Falmouth
    - Mrs. Elizabeth Bach, *Dir.*
  - Mashpee
    - Louise Bullock, *N. Dir.*
  - New Bedford
    - Lucille Azevedo, *Dir.*
- **New Hampshire**
  - Portsmouth
    - Frances Badger, *Dir.*
    - Grace Hadley, *Asst.*
- **Rhode Island**
  - Newport
    - Berthe Daniel, *Dir.*
    - Mrs. Mary Jacoubs, *Asst.*

F.S.A. REGION II—

- **New York**
  - Long Beach
    - Catharine L. Shimer, *Dir.*
  - Massena
    - Louise Meeker, *Dir.*
  - Orangeburg
    - Mrs. Cora Outlaw, *N. Sub.*
  - Watertown
    - M. Marguerite Judd, *Dir.*

F.S.A. REGION III—

- **Delaware**
  - Dover
    - Jule Bouchard, *Dir.*
- **New Jersey**
  - Atlantic City
    - Suzanne Cope, *Dir.*
  - New Brunswick
    - Mary Johns, *Dir.*
  - Paterson
    - Lillian McGrew, *Dir.*
  - Wharton
    - Elizabeth Pearson, *Dir.*
    - Blanche Jones, *Asst.*
  - Wrightstown
    - Marjorie Hale, *Dir.*
- **Pennsylvania**
  - Bethlehem
    - Lucile S. Rouse, *Dir.*
  - Chester
    - Mrs. Alene B. Brown, *N. Dir.*
  - Delaware County
    - Helen Foley, *Dir.*
  - Greenville
    - Gwendolyn Jones, *Dir.*
  - Harrisburg
    - Ruth Mullaney, *Dir.*
  - Mechanicsburg
    - Margaret Reed, *Dir.*
  - Middletown
    - Ruth Bixby, *Dir.*

F.S.A. REGION IV—

- **District of Columbia**
  - Washington
    - Gretchen Feiker, *Dir.*
    - Mrs. Katherine Pell, *Dir.*
    - Margaret Tralle, *Asst.*
    - Alvina Johnson, *Asst.*
- **Maryland**
  - Baltimore
    - Goldie Waite, *Dir.*
    - Mrs. Ruth P. Eaton, *Asst.*
    - Anita Bassett, *Asst.*
    - Mrs. Marion Banfield, *N. Dir.*
  - Bethesda
    - Mrs. Virginia Sholar, *Dir.*
  - Dundalk
    - Mrs. Sarah Graham, *Dir.*
    - Audrey A. Hefte, *Asst.*
  - Elkton
    - Mrs. Rhoda Sutton, *Dir.*
    - Jeanne de Graffenried, *Asst.*
    - Mrs. Mina J. Purviance, *N. Dir.*
- **North Carolina**
  - Carolina Beach
    - Annie M. Dean, *Dir.*
  - Durham
    - Acile Harrison, *Dir.*
    - Betty Payne, *Asst.*
  - Fayetteville
    - Doris Merrill, *Dir.*
    - Mildred Ann Swanson, *Asst.*
    - Margaret Posson, *Asst.*
    - Loraine Sprott, *N. Dir.*
    - Evelyn Todd, *N. Asst.*
  - Goldsboro
    - Ruth Bornmann, *Dir.*
  - Jacksonville
    - Marjorie Trayes, *Dir.*
    - Agnes Shaw, *Asst.*
    - Leona Wilson, *Asst.*
  - Monroe
    - Mrs. Lela P. Roberts, *Dir.*
  - Wilmington
    - Mrs. Elisabeth Hume, *Dir.*
    - Frances Sheltman, *Asst.*
    - Glenn Willard, *Asst.*
- **Virginia**
  - Blackstone
    - LuRay Streibich, *Dir.*
    - Mrs. Ritchie Hamill, *Asst.*
  - Dublin
    - Lilly Rydberg, *Asst.*
  - Hopewell
    - Margaret Crist, *Dir.*
  - Newport News
    - Clara B. Wheeler, *Dir.*
    - Gladys Guyton, *Asst.*
    - Madeleine Smalley, *Asst.*
    - Elsie Burrows, *N. Dir.*
  - Norfolk
    - Orpah Haymond, *Dir.*
    - M. Mildred Daniels, *Asst.*
    - Jane R. Barrett, *Asst.*
    - Mrs. Alfred Anderson, *Special worker*
    - Roberta Maupin, *N. Dir.*
    - Thelma Taylor, *N. Asst.*
  - Petersburg
    - Willa Young, *Dir.*
    - Eloise Rochester, *Asst.*
    - Mrs. Ophelia Johnson, *N. Dir.*
    - Phyllis Williams, *N. Asst.*
  - Portsmouth
    - Magdalene Fuller, *Dir.*
    - Thelma L. Welch, *Asst.*
- **West Virginia**
  - Point Pleasant
    - Helen Libby, *Dir.*

F.S.A. REGION V—

- **Kentucky**
  - Henderson
    - Lois Fair, *Dir.*
  - Louisville
    - Lillian K. Travers, *Dir.*
  - Morganfield
    - Mrs. Eunyce Turner, *N. Dir.*
- **Michigan**
  - Battle Creek
    - Gertrude H. Taft, *Dir.*
  - Van Dyke
    - Katherine Lucchini, *Dir.*
    - Mrs. Arlene Chapp, *Asst.*
- **Ohio**
  - Lockland Heights
    - Rebecca Davis, *N. Dir.*
  - Newton Falls
    - Mrs. Lissa T. Webster, *Dir.*
    - Mrs. Dorothy Roach, *Asst.*
  - Osborn
    - Mrs. Lauretta Muir, *Dir.*
  - Port Clinton
    - Mrs. Harriet Jordan, *Dir.*
  - Ravenna
    - Miriam Koons, *Dir.*

F.S.A. REGION VI—

- **Illinois**
  - Highland Park
    - Mrs. Grace Fearing, *Dir.*
  - Lewistown
    - Helen Dobson, *Dir.*
  - Rock Island
    - Hester Deller, *Dir.*
    - Mrs. Benetta Brudno, *Asst.*
  - Rockford
    - Mrs. Mary B. Tardy, *Dir.*
  - Urbana
    - Kathrvn Maude Gwinn, *Dir.*
    - Katherine Pesek, *Asst.*

Waukegan
Helen Eisinger, *Dir.*
Mrs. Jessye Carrington, *N. Dir.*
Wilmington
Mrs. Anne Lindsay, *Dir.*
Eudean Grantham, *Asst.*

Indiana
Columbus
Mrs. Joy Crawford, *Dir.*
Jeffersonville
Helen McCandless, *Dir.*
Mrs. Georgine Laidlaw, *Asst.*

Wisconsin
Baraboo
Margaret McDonald, *Dir.*
Prairie du Sac—Sauk City
Margaret McDonald, *Dir.*
Tomah
Mildred Kemm, *Dir.*

F.S.A. REGION VII—

Alabama
Anniston
Jane Darland, *Dir.*
Phyllis Gates, *Asst.*
Childersburg
Imperia Briganti, *Dir.*
Edith Sessions, *Asst.*
Mobile
June Donahue, *Dir.*
Elizabeth Sherwood, *Asst.*
Montgomery
Lalia Lewis, *Dir.*
Virginia Eagles, *Asst.*
Ozark
Mrs. Evelyna F. Marable, *N. Dir.*
Talladega
Mrs. Ila Gilbert, *Dir.*
Cora Munzer, *Asst.*
Mrs. Juanita Hill, *N. Dir.*
West Huntsville
Hannah C. Meyer, *Dir.*

Florida
Daytona Beach
Harriet L. Bowe, *Dir.*
Jacksonville
Mrs. Dorothy Mayer, *Dir.*
Mrs. Thelma Lash, *N. Dir.*
Miami
Dorothy Pulse, *Dir.*
Pensacola
Eunice Hurd, *Dir.*
Virginia Adams, *Asst.*
Starke
Sara Reed, *Dir.*
Tampa
Ruth Robbins, *Dir.*
Martha Trumbull, *Asst.*

Georgia
Augusta
Florence Collins, *Dir.*
Mrs. Marian Blair, *Asst.*
Mrs. Ora Bell, *N. Dir.*
Brunswick
Krista Nelson, *Dir.*
Columbus
Mrs. Janet Haag, *Dir.*
Virginia Davis, *Asst.*
Mrs. Frances Penman, *N. Dir.*
Macon
Beatrice How, *Dir.*
Shadie Spears, *N. Dir.*
Ellen B. Collins, *N. Asst.*
Savannah
Mrs. Evelyn Connell, *Dir.*
Sarah Horry, *N. Dir.*
Warner Robins
Sarah Morrison, *Dir.*

Mississippi
Aberdeen
Leontine Butler, *Dir.*
Gulfport
Mrs. Mary B. Fulton, *Dir.*
Mrs. Constance Miller, *Asst.*
Hattiesburg
Lillian Minor, *Dir.*
Pascagoula
Mrs. Mary T. Avery, *Dir.*
Prairie
Leontine Butler, *Dir.*
Winona
Mrs. Irene White, *Dir.*

South Carolina
Charleston
Edith Miller, *Dir.*
Virginia Shields, *N. Dir.*
Columbia
Ester Grau, *Dir.*
Mrs. Rebecca Beard, *N. Dir.*

Tennessee
Milan
Rachel Gard, *Dir.*
Tullahoma
Margaret Clerihew, *Dir.*
Mrs. Eleanor Gordon, *Asst.*

F.S.A. REGION VIII—

Iowa
Burlington
Ruth Doud, *Dir.*
Des Moines
Laura deVeuve, *Dir.*
Mrs. Ruth McGregor, *N. Assoc. Dir.*

Nebraska
Lincoln
Elizabeth Rowe, *Dir.*

South Dakota
Edgemont
Marie N. Newell, *Dir.*
Caroleen Goetting, *Asst.*
Sioux Falls
Helene K. Mosier, *Dir.*

F.S.A. REGION IX—

Arkansas
Bauxite
Mary L. Burrowes, *Dir.*
Z. Minerva Messenger, *Asst.*
Gloria S. Fields, *N. Dir.*
Fort Smith
Mrs. Kathleen Jarrell, *Dir.*
Little Rock—Jacksonville
Adele Guckert, *Dir.*
Lois Hospers, *Asst.*
Jessie M. Grills, *Asst.*
Pine Bluff
Mrs. Grace M. Smith, *Dir.*

Kansas
Eudora
Alice Moe, *Dir.*
Junction City
Esther Ostlund, *Dir.*
Mrs. Lena J. O'Neal, *N. Dir.*
Parsons
Dorothy Edwards, *Dir.*
Salina
Margaret Haviland, *Dir.*
Wichita
Arelisle Quimby, *Dir.*
Julie Menhardt, *Asst.*

Missouri
Lebanon
Mary L. Speed, *N. Dir.*
Neosho
Gertrude Fouts, *Dir.*
Martha Jacobus, *Asst.*
Rolla
Lucile Grimes, *Dir.*
St. Louis
Fanny E. Bickley, *Dir.*
Mrs. Frances A. Porter, *Asst.*
Warrensburg
Dorothy Mudge, *Dir.*
Waynesville
Mrs. Helen Murphy, *Dir.*

Oklahoma
Lawton
Helen McQuillen, *Dir.*
Adelaide Johnson, *Asst.*
Mrs. Sara H. Long, *N. Dir.*
Muskogee
Mrs. Mildred Jeffress, *Dir.*
Pauline Woods, *Asst.*
Mrs. Thelma Pruitt, *N. Dir.*
Norman
Mrs. Sylvia Mariner, *Dir.*
Oklahoma City
Ruth Jenkin, *Dir.*
Mary Holman, *N. Dir.*
Catherine Penn, *N. Asst.*

F.S.A. REGION X—

Louisiana
Alexandria
Mary Adams, *Dir.*
Carroll Dean, *Asst.*
Vivian Thomas, *N. Dir.*
New Orleans
Hazel Rodgers, *Dir.*
Lola Milstead, *Asst.*
Vera Thompson, *N. Dir.*
Ruston
Mrs. Myrtle Strayhorn, *Dir.*

New Mexico
Albuquerque
Mrs. Rowena Harrison, *Dir.*
Clovis
Mrs. Helen Tracy, *Dir.*
Mrs. Mary J. Fielder, *Asst.*
Virginia Hesseler, *Asst.*

Texas
Abilene
Elizabeth Dickey, *Dir.*
Martha Royse, *Asst.*
Alpine
Mrs. Lois Nelson, *Dir.*
Amarillo
Elizabeth Payne, *Dir.*
Austin
Ethel Norton, *Dir.*
Bastrop
Lucille Lang, *Dir.*
Borger
Vena A. Clark, *Dir.*
Brownwood
Esther Hume, *Dir.*

USO DIRECTORY

(*Continued*)

Texas (*Cont.*)
- Corpus Christi
  - Mrs. Marguerite Hill, *Dir.*
  - Bernice Erwin, *Asst.*
  - Mrs. Vessie H. Brown, *N. Dir.*
- Dallas
  - Rosemary Reinhold, *Dir.*
  - Mrs. Ruth G. Hopper, *Asst.*
- El Paso
  - Cara Lehmann, *Dir.*
  - Winallen Griffin, *Asst.*
  - Ruth Jackson, *N. Dir.*
  - Mrs. Aquilla Thompson, *N. Asst.*
- Freeport
  - Mrs. Ruth Chambers, *Dir.*
  - Ada Orr, *Asst.*
- Gainesville
  - Mrs. Regina Ewalt, *Dir.*
  - Mrs. H. P. Schmidt, *Asst.*
- Galveston
  - Wilma Lewis, *Dir.*
- Hondo
  - Louise Allen, *Dir.*
- Mineral Wells
  - Mrs. Georgiane Stary, *Dir.*
  - Margaret Clark, *Asst.*
  - Mrs. Gertrude Mason, *N. Dir.*
- Orange
  - Placement Pending
- Palacios
  - Ruth Mumford, *Dir.*
  - Charlotte Lane, *Asst.*
- Paris
  - Goldie Mitchell, *N. Dir.*
- San Antonio
  - Helen Gilbert, *Asst.*
  - Mrs. Rosa Paige, *N. Dir.*
  - Zer Nona Stewart, *N. Asst.*
- San Marcos
  - Lovaine Lewis, *Dir.*
- Temple
  - L. Lucile Barnes, *Dir.*
  - Louise Ernst, *Asst.*
- Texarkana
  - Helen Little, *Dir.*
  - Alice Mazuzan, *Asst.*
- Victoria
  - Mrs. Opal Simpson, *Dir.*
- Wichita Falls
  - Josephine Lees, *Dir.*
  - Manila Smith, *N. Dir.*

F.S.A. REGION XI—

Colorado
- Colorado Springs
  - Ruth Righter, *Dir.*
- Denver
  - Mrs. DeLite Helm, *Dir.*

Utah
- Ogden
  - Mrs. Gwendolen Stevens, *Dir.*
  - Katherine Grunert, *Asst.*
  - Annabel Sawyer, *N. Dir.*
- Salt Lake City
  - Mrs. Alice White, *Dir.*
  - Lillian Woodworth, *Asst.*

Wyoming
- Cheyenne
  - Mrs. Anne Wolfolk, *N. Dir.*

F.S.A. REGION XII—

Arizona
- Huachuca
  - Marian Washington, *N. Dir.*
- Phoenix
  - Ruth Campbell, *Dir.*
- Tucson
  - Mrs. Jean Williams, *Dir.*
  - Eleanor B. Coleman, *N. Dir.*

California
- Carmel
  - Helen McKinstry, *Dir.*
  - Mrs. Kate Martin, *Asst.*
- Herlong
  - Adelaide Lins, *Asst.*
- Inglewood
  - Catherine Wahlstrom, *Dir.*
  - Mrs. Ruth S. McFarland, *Asst.*
- Lompoc
  - Eleanor Hoyt, *Dir.*
  - Helen V. Young, *Asst.*
- Merced
  - Hilda G. Swenson, *Dir.*
  - Mrs. Margaret Ross, *Asst.*
  - Henri Mae Younge, *N. Dir.*
- Oakland
  - Mrs. Albertine Parker, *N. Dir.*
- Palm Springs
  - Mrs. Eloise Hirt, *Dir.*
  - Gail Sollender, *Asst.*
- Paso Robles
  - Viola Loken, *Dir.*
  - Marion Iverson, *Asst.*
- Riverside
  - Mrs. Marguerite Hogue, *Dir.*
  - Mrs. Angelin Beck, *Asst.*
  - Mrs. May E. Hill, *N. Dir.*
- San Bernardino
  - Ruth E. White, *Dir.*
  - Edna L. Turner, *Asst.*
  - Sue Hammack, *Asst.*
  - Mrs. Exie L. Hampton, *N. Dir.*
- San Diego
  - Eunice Schmidt, *Dir.*
  - Felicia Pakeltis, *Asst.*
  - Marguerite Dalziel, *Asst.*
- San Francisco
  - Alice Collins, *Dir.*
  - Mrs. Gertrude White, *N. Dir.*
  - Bernice Inmon, *N. Asst.*
- San Luis Obispo
  - Mary McDill, *Dir.*
- Santa Monica
  - Vivian Osborn, *Dir.*
  - Mrs. Evelyn Bourns, *Asst.*
- Vallejo & Benicia
  - Margaret Jenson, *Dir.*
  - Helen Dunsmore, *Asst.*
- Ventura
  - Mrs. Irene V. Costo, *Dir.*
- Wilmington
  - Mrs. Helena Albrektson, *Dir.*
  - Mrs. Irene English, *Asst.*
  - Mrs. Leda H. O'Brien, *Asst.*

Nevada
- Tonopah
  - Mrs. Ione Farrow, *Dir.*

Oregon
- Ashland
  - Mrs. Bayonne Glenn, *Dir.*
- Corvallis
  - Eleanor McFall, *Dir.*
  - Virginia Guernsey, *Asst.*
- Hermiston
  - Mary Lou Johnson, *Dir.*
  - Mrs. Jeannette Wilson, *Asst.*
- Medford
  - Elizabeth Fuselman, *Dir.*

Washington
- Bremerton
  - Mildred Taylor, *Dir.*
  - Ellen Otto, *Asst.*
- Spokane
  - Helen Gutknecht, *Dir.*
- Tacoma
  - Eva Hancock, *Dir.*
- South Tacoma
  - Marion Phillips, *Asst.*
  - Isobel Smith, *Asst.*
- Yakima
  - Freeda Hartzfeld, *Dir.*
  - Irene Perkins, *Asst.*

MOBILE UNITS

California Desert Area
- Mrs. Marguerite Van Derwerker
- Elizabeth Caulkins

Tennessee
- Lois Buell
- Florence Lee

TRANS-OCEANIC BASES

Territory of Hawaii
- Mrs. Eunice Hinricksen
- Dorothea Nylin
- Lillian Gibson
- Mary Jane Upson

Newfoundland
- Mrs. Elizabeth Hinkle

Alaska
- Marjorie Starkweather
- Mrs. Jane H. Whitney

Panama Area
- Gertrude Don Dero
- Lela Horton

South America
- Margaret Deppen
- Mary E. Ellis
- Dorothy F. Wood

Caribbean Area
- Jean Ramsey
- Gertrude Rodgers
- Mrs. Vera Katz
- Sally McPherson

SUMMARY OF USO OPERATIONS NATIONAL BOARD YWCA

Number of Locations	187
Number of Operations	231
Number of Staff on Location	315
White Directors	172
White Assistants	89
Negro Directors	44
Negro Assistants	9
Special Worker	1
Mobile	4
Overseas	16

[redacted]

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Hot Weather Brings Increased Outdoor Activities in USO

ARMY WIVES *in Augusta, Ga., make good use of USO skates.*

Pendleton photo

HOMEMADE *ice cream on a hot afternoon in North Charleston, N. C., club.*

Photo by R. A. Reilly

Summer Fun in the Sun

If USO clubhouses seem not so full these days it is not because business is falling off, but because so many of the customers have gone outdoors. With the arrival of summer the seashore and the country beckon again as they always have, war or no war.

A trip into the real country, with the change of scenery it offers, will always have its attractions, but in these days of wartime travel restriction many a club yard or nearby park is providing the locale for a series of rousing good picnics. Barbeque pits have been dug and outdoor fireplaces built and the weenies taste just as good as they did a couple of years ago when it took ten gallons of gasoline to get them to that favorite picnic spot in the woods.

Badminton, horse shoes, croquet, ping pong, archery equipment has been set up for these sports in many clubs with sprawling yards—and groups use them constantly. In the Lawton, Okla., club the badminton and exercise classes have been made into one outdoor class and, according to report, the girls have now developed a mean strategy as well as slim hips.

Gas rationing did not stop the industrial girls at the Inglewood, Cal., club. When a picnic was arranged at a park some distance from town a convoy of bicycles, each with a luncheon basket securely lashed to the handlebars, scorched the pavements between the club and the park.

In several communities the facilities of nearby golf clubs, tennis courts and stables have been made available to USO groups.

Service men interested in entering the tennis matches arranged by the Corvallis, Ore., club are asked to sign up the

(*Continued page 2, column 3*)

Sergeants Succumb To Lure of Sea and WACS

Once upon a time there were two sergeants named Georgie and Johnnie. They had three things in common: they were 18 years old, they were aerial gunners and they received their preoverseas furlough at the same time. Because home was far away and they might be called back before their leave was over, they decided to spend their time in Daytona Beach where the sea is blue and there are a lot of Wacs.

After three days in Daytona Beach Georgie and Johnnie arrived at the USO club stony broke. On their first night in town they had visited a nightclub and had fallen among thieves. But youth is resilient so their faces were bright, even though their purses were flat, when they told their story at the USO club. The USO was unable to help them financially but a volunteer who heard their sad story, and who had a boy of her own in Australia, invited them to spend the remainder of their leave in her home.

One day their hostess was ill, so Georgie and Johnnie took care of her. They prepared her meals, cleaned her house and took care of all the chores. When they weren't with her they were at the USO club being handy men there.

And finally during some of their off hours they did meet Wacs. One afternoon at a Wac picnic Georgie had his moment. For half an hour he had the group marching up and down the beach. "Everything's all right now," he said, "for a long time I have wanted to put those girl soldiers through their paces on the drill field. They're really o.k."

Absenteeism in Reverse or Drama in a War Plant

The dramatic part that workers in a Brooklyn war plant played in winning the African campaign was made known recently by the New York Ordnance District of the U. S. Army.

The story began with an urgent cable from General Eisenhower to Army Ordnance in Washington calling for an entirely new type of optical instrument in a hurry. A quick survey convinced the Army that the Mergenthaler Linotype Company was the only concern equipped to fill the order in less than six months. Speed was vital.

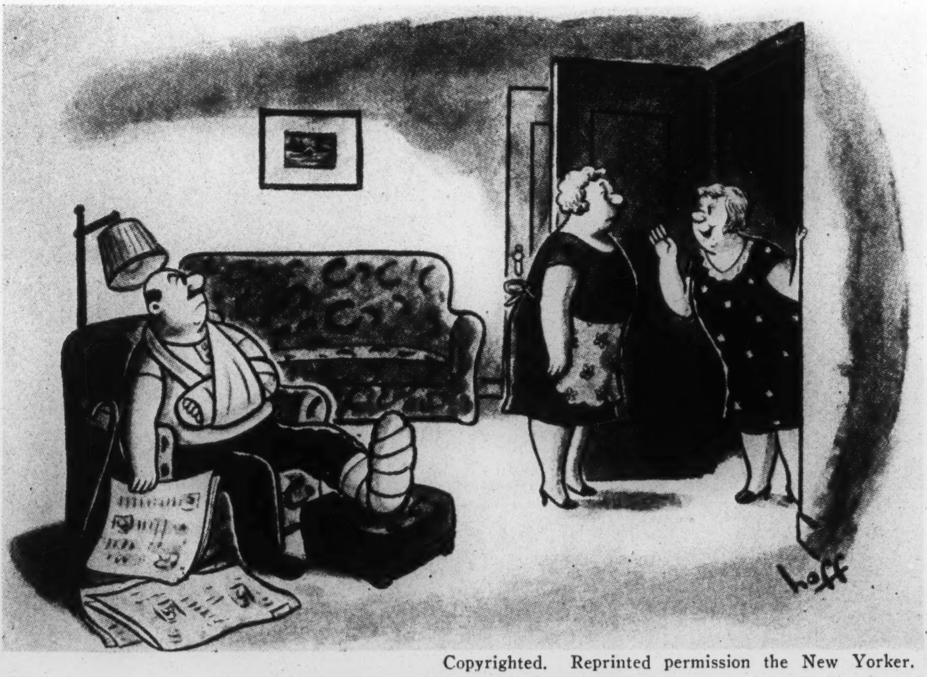
Mergenthaler officials gathered their key talent; told them the story. Could these experts do the job in 30 days? "Sure," was the answer. "Just give us a few cots and plenty of black coffee."

Within a few hours a corner of the plant was converted into sleeping quarters and a steaming jug of coffee was always waiting.

Day and night the men drove themselves. When fatigue numbed their brains and fingers they grabbed a couple of hours sleep and then raced back to fight against time.

Just 27 days after the first pot of coffee was brought to these men, 220 optical instruments were loaded on two planes at LaGuardia Field and flown directly to General Eisenhower on the African front.

How vital the instruments were to the African campaign no one will really know until the war is over, but the men in the Mergenthaler plant feel—and rightly—that they played an important part in the desert victory.



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"Good afternoon, Mister Absentee."

Summer Fun In the Sun

(*Continued from page* 1)

day before the games. At the proper time co-ed partners meet them at the club loaded with enough tennis rackets to go around and even tennis shoes for the men.

Rolla, Mo., writes that there has been such a run on tennis rackets that already they need repairs, and the tennis season still has a long way to go. The courts in Orange, Tex., are kept busy all day long since 64 soldiers' wives signed up for tennis classes after one of their number offered instructions.

Horseback riding is a drawing card, but the supply of horses is not always large enough to meet the demand. In order to discourage competition for the rides arranged by the Riverside, Cal., club, the soldiers who got in on the early ones now tell prospective riders, "Oh, you wouldn't have fun, the horses are no good and you would have an awful time!"

In the Tacoma, Wash., and Lawton clubs they have been more honest and the weekly trips, followed by supper at the club, have a long waiting list.

All over the country baseball and soft ball teams and leagues have been formed. In Orange a city-wide league made up of nine teams of war workers and three of sailors has been started and games are scheduled for the entire summer.

An all-Indian baseball team is a distinction that probably only the Hermiston, Ore., club can boast. The team is one in a league the USO club helped to organize and games are played on a diamond back of the clubhouse. Another diamond was built in Hermiston by the Ordnance Department and intra-mural games will be played there. Perhaps at the end of the season a series for the city championship will be run off by the two groups.

In Jeffersonville, Ind., the town is soft ball mad, but practically all the playing is done by men. The club is therefore organizing some girls teams to give an extra fillip to the matches.

Swimming is probably tops on the list of summer activities. Hot sands and cool water have an irresistible appeal as the thermometer shoots upward. So on both the Atlantic and Pacific shores, as well as on the Gulf, USO clubs have arranged for beach picnics and swimming parties, sailing and fishing trips. In inland cities, too, hundreds of events have been planned around lakes and pools. YMs and YWs have been generous with their facilities, while their swimming pools—the urban ol' swimmin' hole—are much more sanitary than their country rivals and, the story has it, as much fun.

Repairs For Army Keep Navy Mothers Busy

Herzog photo

ON THE SPOT emergency repair service for a soldier at Camp Grant, Ill., by two members of the Navy Mothers Club in the Rockford USO.

Catharine Bennett

(This story was written for Information Sheet by a student of the New York School of Social Work assigned to the YWCA for special research.)

"Free tailoring service for men in uniform. Members of the Rockford Navy Mothers Club are here every evening and Sundays for your convenience. We take care of all kinds of tailoring and mending for your uniforms. Our reward is the belief that some mother somewhere will do as much for our sons."

With this sign members of the Navy Mothers Club give proof that they don't play favorites. Although they admit their hearts are with the Navy, they are sewing for the soldiers at Camp Grant.

For the past two years the Navy Mothers clubroom at the USO has been the busy scene of vital repair work for soldiers. Back in May 1941 a soldier asked the USO director where he could get a button sewed on his coat. The Navy Mothers Club, with a ready thread and needle, came to the Army's rescue.

Today, eight hundred garments a month are altered or repaired. Coats are cut down, collars adjusted and cigarette burns repaired.

The men like to visit the workshop for something more than a "stitch in time." According to Mrs. Elsie Helman, president of the club, the boys like to stop by just to sit and talk. "They say we seem like their own mothers," said Mrs. Helman. "Many times a second visit is made just to say 'hello.' "

Away from the USO these patriotic women are busy people. Besides running their own homes, many of them are expert dressmakers. Although they frankly admit that had they realized the magnitude of their undertaking they might never have started it, they seldom fail to be right on hand when the soldiers come into the USO with any sewing jobs.

The club activities don't end with these tailoring jobs. The members have made curtains for Camp Grant day rooms and photographer's studios, costumes for camp shows, a miniature hospital tent for inside instruction during the winter months and pillows for the USO music room.

The Navy mothers have still another project on their already full schedule. One afternoon a week they make layettes for sailors' babies. And, to prove that they have other skills, several of these mothers recently participated in the Sunday soapbox at the USO center. They spoke in a panel discussion on "Women and the War."

The fine services of these women were formally recognized in a special program at the USO club recently. The mothers who had donated a certain number of hours to the tailoring service got a special service award. As one of the USO workers said, "Those mothers give the most real service to the men of any of us." Johnny Doughboy can verify this, too, when he tells you how he passed inspection because a Navy mother turned his baggy uniform into a perfect fit.

Rowdy Urchins Create New Problem for USO

Children are not a primary concern of the USO, but when a community's social services are inadequate and very little is being done about a bad situation, a USO director is likely to find herself pitching in and doing what she can in moments that are squeezed from her precious free time.

Below we quote from a director in an apathetic village turned boomtown. In this community there are no Boy or Girl Scouts, almost no police, few social agencies and a defense council that, until recently, has seen no need for providing playgrounds and recreation leaders. These neglected children are a problem that has been thrust upon the club. In this operation military and war worker attendance averages 1,000 a day; there is neither time nor space for a child program in the USO club in addition to the regular activities.

"The problem of small children who run in and out of our building is one which is not only annoying but distressing. They range in age from five to nine and are the underprivileged children of the city. They constitute an element which, according to the Children's Aid Society, has been a menace for years.

"The situation is, undoubtedly, aggravated by their parents working in the plants but it is felt by everyone that these children are a town problem. The USO has brought this to the attention of the Defense Recreation Committee.

"We are greatly concerned because the children (all boys) are climbing all over the outside of the club. At first they climbed in the windows. When we locked them the kids broke the glass, stuck their hands through and unlocked the latches. They have stolen our Chinese checker marbles and have raided our storeroom. Much to my surprise I found, the other day, these same little kids selling our coffee on the streets for ten cents a pound!

"One day I decided that the soft answer was not doing much good any more and so I spoke more than sternly to them. Now they are scared of me and run when they see me coming, but they have discovered a safe refuge in the men's room! One night I went right in after them with disastrous results to all concerned including a soldier and a sailor!

"The outcome of all this is that the Defense Recreation Committee is trying now to figure out a way to provide leadership for these children, as well as a playground for them. Incidentally we have not been troubled so much lately, except for having our flowers pulled up by the roots!"

Indian Girls Collect Books For USO

GIRL RESERVES from Chilocco, Okla., with the books and book bins they filled for soldiers and sailors in Oklahoma USO clubs. Girls from many Indian tribes attend the Chilocco Indian School, a nonreservation, government boarding school.

Statisticapsules

USO workers employed by the YWCA were writing, thinking and working on ways to combat labor turnover and absenteeism in our vital war industries for months before these problems became a nationwide concern. Working in war production areas, these USO representatives saw firsthand the crowded living conditions, the lack of adequate eating, shopping, transportation, medical and recreation facilities, as well as the inadequate provision for the day care of children of working mothers.

These factors all contribute to the strain under which they live and work.

According to recent tabulations USO is more than providing services to meet these needs in 47 different areas. In 39 of these areas more than 50 per cent of the monthly attendance at USO clubs is made up of workers—both men and women—and their families. In eight areas about 40 per cent of the attendance comprises workers and most of the remainder are military personnel.

Attendance at our clubs for group activities and individual services totaled more than 1,730,000 during April.

EVERY WEDNESDAY VOLUNTEERS IN YAKIMA, WASH., bake from 250 to 300 dozen cookies for the USO. Two women from each of the churches affiliated with the Council of Churches help each week.

Spaghetti Supper Brings About a Change of Heart

One Sunday afternoon a disgruntled looking private and his equally unhappy looking wife walked into the Anniston, Ala., club. They came because they had received some spaghetti from friends in Brooklyn and they wanted to cook it in the USO kitchen. Private X was homesick, and spent a good deal of time telling how he hated the South and all southerners. He found them definitely unfriendly and it was not to fight for such people that he had joined the Army, he said indignantly.

Out in the kitchen members of the Navy Mothers Club were getting their homemade cake and coffee ready to serve. The club is made up of older women with a small town background and the friendly, neighborly manner that goes with it. The director sent the Brooklyn soldier and his wife out to join them.

The mothers had never tasted real Italian spaghetti, let alone seen it cooked, and they were fascinated. Under their questioning and interest, Private X expanded. As he disclosed the glories of Flatbush to them he beamed with pride. By the time the spaghetti was ready to serve he was king of the kitchen. Mothers, staff and a few extras were invited to bring up their plates. Winding several yards of spaghetti on a fork is not as simple as it looks, they found, but when they finally got it to their mouths they knew they had something. They heaped compliments on the erstwhile unhappy soldier.

Now Private and Mrs. X are regular nightly visitors to the club and at least once a week they play a return engagement with a big spaghetti dinner for the crowd.

Not long ago Private X confided to the director that there certainly were friendly people in the South. His trouble, he said, was he just hadn't found them before. Now even his sergeant has noticed the difference in his attitude and has wondered why Private X's work was so much better.

"I told the Sarge," he explained, "I had found some real people on Leighton Street and now I could be a better soldier because all these people were really worth fighting for."

Strange Species

On returning to camp after a furlough a Wac, the only woman in uniform on the train, was a bit nonplused when a lieutenant colonel and a major asked if they might sit with her because they had never seen a Wac before.

ADVANCE RELEASE: For SUNDAY Papers, June 13, 1943
Fitzgerald - Labor 24

OFFICE OF WAR INFORMATION
U. S. DEPARTMENT OF LABOR

OWI-1961-a

Labor and management must take the initiative in working out mass feeding facilities if war workers are to have a well-rounded diet, Secretary of Labor Perkins announced today.

"The Women's Bureau has formulated standards for eating periods for women in war plants -- a minimum of 30 minutes' time, a menu that includes hot, nutritious foods at a reasonable price and a pleasant place in which to eat away from the workroom," she said. "In a recent survey of 183 war plants, Bureau agents found that 123 gave 30 minutes for lunch, not paid for in the worker's wages. A total of 1/5 of the plants paid for lunch periods, ranging from 15 to 30 minutes. Of 177 plants reporting on facilities, about 60 percent had cafeterias or mobile canteens serving hot food of some kind. The findings reflected a wide variety of conditions - some meeting fully Women's Bureau standards. But these statistics don't tell the whole story. Here's what the Bureau also discovered:

"Thousands of war workers have no hot food during working hours.
"Thousands of war workers must eat lunch in 15 minutes.
"Thousands of workers eat in the open, exposed to all weather variations.
"Thousands of workers eat in unsanitary rest rooms.

"And the results? Lately people have been calling it absenteeism. Personnel offices call it anemia, indigestion, nervous debility and work lag. You can see it in the girl at an ordnance plant who doesn't even attempt to eat in her 15-minute dinner hour - she cat-naps on a bench in the hall.

"Conditions such as these have a number of causes. The primary one is an inadequate supply of food at places of work. Secondly, workers cannot always bring food with them from home - many live in boarding houses, others have too many home duties to spare the time for preparation of lunches or do not want to take rationed items from the family group. Thirdly, peacetime service facilities simply cannot cope with the huge increase on top of labor shortages and rationing. The rapid conversion of the production set-up to a war economy has brought in its wake dislocations in essential civilian establishments that cannot be easily overcome.

"Take the hypothetical case of the XYZ metal shop. In 1940, this plant employed 100 men and women in a little factory near a railroad siding. The workers had a 40-hour week with an hour for lunch. Three nearby dining car restaurants supplied food for some employees and others brought lunches packed at home, eating them in the rest rooms.

"Today, the XYZ company employs 1,000 persons in the plant. These men and women work in three shifts, 8 hours a day, with 15 minutes for lunch. One of the dining cars closed up for lack of help, the remaining two are jammed each shift. Outside the plant gate is a small refreshment stand that sells sandwiches and milk, soft drinks, candy and apples. Some men and women bring food from home and eat in the factory yard or in the small, crowded rest rooms.

"Why aren't there adequate facilities for XYZ workers? How about a cafeteria? Out of the question, say plant officials. The factory has not been enlarged and lack of labor and materials won't permit it for the duration. Why not staggered lunch periods, so more people can take advantage of the restaurants? Impossible, say production engineers. Work flows continuously from one section of the plant to the next and when one process stops all of them stop. Mobile canteens have proved efficient - could they be tried? Absolutely no, say maintenance men. The factory floor is jammed to capacity now with workers and machines, and the danger of foreign particles in delicate mechanisms is too great a risk.

"Can anything be done? Yes - through education and planning by both plant officials and community interests.

"First the worker himself must be made to realize the importance of good food and enough food. Rationing has resulted in any number of nutrition programs and both government and private agencies are eager to make information on this subject available to all workers through plant employee relations departments. Unless the worker is made sufficiently conscious of the necessity for a healthful diet, America faces an exhausted labor force.

"Second, a coordinated plan for the establishment of better eating facilities should be worked out by factory management and existing local firms. The XYZ company could arrange for catering by a well-equipped restaurant. Hot food sold from trucks run into the factory yard could be eaten in a pavilion constructed close to the plant. Even a temporary building is adequate as a lunchroom, if some form of heating is provided and sufficient tables and chairs are available. Could not the problem be approached as a community affair? The entire responsibility does not necessarily have to be left to busy plant management - the local chamber of commerce, board of trade, and other community organizations could draft local firms for a cooperative plan.

"Many war production plants, of course, do not have such obstacles to surmount and the large new aircraft and munitions factories are models of excellent plant housekeeping. One aircraft plant in Wichita has an employees' club cafeteria just outside the building that serves 1800 persons a day. Another plane factory in the same city has a rolling cafeteria, electrically heated, that offers two kinds of meat, potatoes, two vegetables, salad, dessert, coffee or milk and bread and butter. A St. Louis ordnance plant has a cafeteria that can serve an employee a hot plate lunch in three minutes. One firm sells a hot plate lunch for 35 cents. At a cannon plant in St. Paul, workers receive hot food at cost from stands and canteens.

"In the main, however, these stream-lined services are in the huge new plants that have mushroomed since 1940. Conditions are particularly unsatisfactory in shipyards, where most of the work is out of doors and where dust and heavy cranes complicate the use of grounds for eating purposes. In one shipyard with a cafeteria, girl workers have been told to bring their lunch "so you won't get caught in the cafeteria mob."

"As demands on America's food supply increase, citizens will be forced to concentrate on quality rather than quantity. The good health of the Nation's labor force is of primary importance. Any serious breakdown in the physical well-being of that force will be a weakness in the home front. Through the concerted efforts of the workers, his employer, his community and his government, America's soldiers on the production front must be kept on the job. Food will win the war - at the XYZ plant as well as at Tunis and Burma."

ADVANCE RELEASE

MVR

ADVANCE RELEASE: For MONDAY AFTERNOON Papers, April 26 1943.
Perry - 2396

OFFICE OF INFORMATION

Photographs illustrating this release are available on application to the Photographic Section, News Bureau, O.W.I., Room 1750-A, Social Security Building

OWI-1651

With the over-crowding of restaurants and the closing of many restaurants during hours in which the swing or night shift workers need service, the long distance from many plants to community centers, and the increasing number of homemakers whose work in war plants makes food shopping and preparation more difficult, dependence upon in-plant feeding is increasing. Already reports from the Regional Representatives, Nutrition in Industry, indicate that food rationing is reducing the number of packed lunches carried by workers, who now seek cafeteria or restaurant meals.

Adequate food for workers is one of the important factors in reducing absenteeism, fatigue, labor-turn-over and slow-downs in production, say nutrition experts in this country and in Britain. So important is this factor that factory inspectors of the British Ministry of Labor have been given the power to require any factory employing 250 or more workers to have a canteen. More than 96% of the British factories employing more than 250 and 7,500 small factories now have canteen service.

There are still some 22,000 war plants in this country that do not have in-plant food service, it is estimated by the Nutrition in Industry Division, of the Food Distribution Administration.

Plant managers who have taken advantage of the Nutrition in Industry Division's services report that food services are well worth their cost in resulting improvement in morale. While it is difficult to measure results in terms of production, as many factors as well as food service may enter into the production picture, the following comments from some of the plants maintaining food service are indicative that food is a tool of production:

"Production increased 10% due to improvement in morale in first two weeks after food service was set up according to recommendations of the Government's Nutrition in Industry Division."

Hugh Comer, Executive Vice-President,
Avondale Mills,
Sylacauga, Alabama

"Absenteeism was cut 19% in first four months following installation of our Nutrition in Industry Program which includes serving of Victory Lunch Specials providing balanced meals supplying more than 1/3 of the daily food needs."

Servel, Inc., Evansville, Indiana

"Well-fed workers on the production front are as vital to Victory as well-fed soldiers on the fighting front. Nutritious meals served in attractive surroundings build morale, promote efficiency and reduce absenteeism."

Arthur C. Dorrance, President,
Campbell Soup Co., Camden, New Jersey

"With the fast tempo and added pressure of war work the working man and woman in the plant today deserves and must have proper food. Plant cafeterias should pay special attention to supply good wholesome, nutritious food in the meals they serve their employees."

C. S. Swayze, Assistant General Mgr.,
Eastern Aircraft, Linden, New Jersey
(Division of General Motors)

X-14563

"An adequate nutrition and feeding program is an important contribution to the health and safety program for employees."

Craig Cochrane, Manager,
Industrial Relations Department,
Eastman Kodak Company, Rochester, N.Y.

"We are meeting the need for changing food habits necessary under wartime rationing by serving more raw vegetablessalads, more fresh vegetables and fruit, and milk, and weekly Meat Conservation Lunches in our seven cafeterias and thirty--five mobile units which provide meals that follow Government recommendations."

John C. Becker, Cafeteria Manager,
Curtis Wright Plant,
Paterson, New Jersey

There are four types of in-plant feeding programs: cafeterias, canteens or lunch counters, mobile units, and lunchbox service. Either hot or cold lunches may be served to meet the needs for health protection if they include the "basic 7". As listed in the new wartime nutrition flyer, these are: GREEN and YELLOW VEGETABLES, raw, cooked, frozen or canned; ORANGES, TOMATOES, GRAPEFRUIT, or raw cabbage or salad greens; POTATOES AND OTHER VEGETABLES AND FRUIT, raw, dried, cooked, frozen or canned; MILK AND MILK PRODUCTS, fluid, evaporated, dried milk or cheese; MEAT, POULTRY, FISH OR EGGS, or dried beans, peas, nuts or peanut butter; BREAD FLOUR AND CEREALS, natural whole grain or enriched or restored; BUTTER AND FORTIFIED MARGARINE.

The general recommendations of the Nutrition in Industry Section are:

1. Wherever it is impossible for employees to secure adequate food in the vicinity of the plant, some type of plant feeding should be provided. The type of plant feeding should depend upon the size, location and lay-out of the plant. It may include cafeterias, canteens, lunch counters, mobile units or packed lunches. It may be a plant-managed or a concessionaire managed food service. It should be under the direction of a trained nutritionist, whenever possible.

2. Food services in plants on three shifts should be on a 24-hour basis. As some of the problems which lead to fatigue, illness and accidents are the lack of adequate breakfasts, nutritious packed lunches and sufficient food service for swing shift workers, the 24 hour basis food service is important for production as well as for health protection.

3. Too frequent changes from one shift to another should be avoided. It is desirable that a worker stay on one shift at least two or three months so that he can make the necessary adjustments to provide for normal food, rest, recreation and sleeping habits.

4. The length of the lunch period should be long enough to allow at least fifteen minutes for actual consumption of food. In the majority of cases this would permit lunch periods not less than thirty minutes.

5. Staggered lunch periods are recommended in order to provide for full utilization of labor and equipment and to provide for service to the greatest number of employees.

6. Plant lunches including simplennutritious foods at moderate prices are recommended as a means of encouraging better food selection and preparation, economy in time and service, and conservation of food. Plant lunches might in-

clude citrus fruit or tomato juice, meat or some alternates, raw vegetable salad, green or yellow vegetable, potato, milk in some form. Choice of beverage should be included.

7. Cold lunches may be as nutritious as hot lunches if the right foods are selected. Suggestions for both cold and hot lunch menus will be provided by the Nutrition and Food Conservation Branch, Nutrition in Industry Division, Food Distribution Administration upon request. Lunches should provide 1/3 the daily food requirements as recommended by the National Research Council.

8. Between-meal feeding is recommended where plants can allow eating near assembly lines or in proximity of machines. It has been proven that between-meal feeding reduces fatigue and accidents. In every instance where between-meal feeding has been tried production has increased. Between-meal refreshments should consist of foods that may be served quickly and eaten without too much preliminary preparation on the part of the worker. They should consist of something more than candy and soft drinks. Bread is just as good a source of ready energy as any candy bar or soft drink. Some suitable foods for between-meal feedings are tomato juice, fruit juice, milk or sandwiches or enriched or wholegrain bread with nutritious fillings.

9. Consumption of milk is to be encouraged. Wherever possible, each worker should consumerat least one pint of milk daily. There is no evidence that milk is of any value in preventing toxic reactions in munition industries. However, the inclusion of a pint of milk a day in the average American diet is essential for an adequate supply of calcium and Vitamin B2. Milk also contributes important proteins.

10. The selection of the right food at the right time should be encouraged through the use of posters, articles in plant magazines and leaflets distributed to workers. The Nutrition and Food Conservation Branch of the Food Distribution Administration and several commercial sources have materials for distribution. The Nutrition and Food Conservation Branch of the Food Distribution Administration maintains a National Nutrition News Service which will provide articles for plant publications upon request.

11. Nutrition education for women in the families of employees is recommended. This may be offered through leaflets distributed to workers through lectures, motion pictures, and through clubs and classes which may be arranged throught the cooperation of nutrition committees and labor management committees.

"Plants of all sizes can request the services provided by Nutrition in Industry Division and the resources available through its arrangements with the U. S. Public Health Service, Industrial Hygiene, and Army Ordnance Division, and the Nutrition in Industry local and state committees. With the united effort of management, communities, states and Federal Agencies, the increased dependence of employees upon in-plant feeding can not only maintain but can improve the health, stamina and production output of war workers as an aid to Victory."

ADVANCE RELEASE

MVR
your copy

ADVANCE RELEASE: FOR SUNDAY PAPERS, MARCH 7, 1943.
Rosenfeld - 74319

OWI-1341

OFFICE OF WAR INFORMATION

Photographs illustrating this story are available on application to the Photographic Section, News Bureau, OWI, Room 1750-A, Social Security Building.

War plants that serve their workers the balanced meals recommended in the government-planned Nutrition in Industry Program have increased production and employee health and have reduced absenteeism and accidents, the Office of Defense Health and Welfare Services said today on the basis of reports from factories from coast to coast. The National Nutrition Program, begun five months ago, has given this boost to America's war production program.

The program calls for installation in war plants of cafeterias operated according to ODHWS plans. The program also urged classes and distribution of literature to show what kinds of foods make a well-balanced diet and how they should be prepared.

Food rationing has hit plant cafeterias using the Nutrition in Industry Program as wlll as outside cafeterias and restaurants, ODHWS officials admitted. But their familiarity with the use of meat alternates and fresh vegetables, ODHWS points out, puts these programmed plant cafeterias in a better position to provide workers with a proper diet.

United States Public Health Service officials have estimated that many million man-days may be lost in 1943 in war industry alone because of absent workers. War Manpower Commission Chairman Paul V. McNutt has declared that much of this working time can be saved this year if war workers keep fit. The goal of the National Nutrition Program is to attempt to reduce this loss of manpower to a minimum.

A year ago the U. S. Public Health Service noted a rise in accident disability rates and in time lost because of illness in war plants. With the rapid expansion of war production centers, lack of housing close to war plants prevented workers from going home for a hot lunch. Transportation shortages and gas and tire limitations also made it hard to leave the factory for the home-cooked lunch.

In addition, midnight-to-dawn and afternoon-evening shifts were not getting properly fed when adjacent cafeterias and restaurants outside the plant closed at night. Shortages, too, cut down the food housewives were able to pack into the lunches for workers.

Early in 1942, the National Research Council sent Dr. Robert S. Goodhart on a nation-wide tour of industrial centers to study the situation. Dr. Goodhart is now Technical Adviser of the Nutrition Program and a member of the Public Health Service staff. He found that lack of correct diet was causing workers to lag at the machines, take time off to rest up, break down during important jobs because of nervous strain.

Recommendations from the doctors and nutritionists who made the survey were the basis for the nutrition program. The ODHWS set up a regional organization to get the program to workers and plant managers as quickly as possible. Thousands of volunteers were recruited to serve on nutrition committees in communities in 2,700 counties in every state in the Union. These volunteers explained to war workers and homemakers why there was a real need for them to eat scientifically-measured meals. Representatives of the ODHWS explained to industrialists the benefits of installing cafeterias in their plants and using competent nutritionists to plan strengthening, health-sustaining lunches and breakfasts.

The recommendations included a "Victory Lunch." This consists of citrus fruit or tomato juice, meat or alternate, raw vegetable salad, green or yellow vegetable, potato, and milk in some form. An Evansville, Ind., plant reported absences were 19 per cent lower in the first four months after installing "Victory Lunch Specials."

Between-meal nourishment was recommended to give the worker added strength and to break monotony. The program planners suggest that these snacks include tomato, juice, fruit juice or milk, and enriched bread sandwiches with nutritive fillings. In a plant at East Pittsburgh, Pa., food wagon service that supplies workers with between-meal energy has been credited with cutting the accident rate 30 per cent in the face of a 21 per cent increase in man-hours of work.

(more)

Milk is another "must" on the Nutrition Program's recommendation list. The ODHWS says a pint of milk a day is essential if the worker is to get adequate supplies of calcium - bone and teeth builder - and B vitamins, which are useful in strengthening morale and concentration at the machine. A Trenton, N. J., war plant reported that a free half-pint of milk distributed daily to 1,500 employees during a five-minute recess accounted for a 30 per cent reduction in accidents and general improvement in employees health.

Every Curtiss-Wright plant in the country provides food service for its employees and follows the ODHWS program. The Paterson, N. J., plant has seven cafeterias and 35 food wagons serving more than a quarter of a million meals a month. This cafeteria and food-wagon service is changing worker's eating habits. Introduction of Meat Conservation Day has developed use of meat alternates and unrestricted meats. Appetizing ways of serving fresh fruits and vegetables have increased their use. In one month, in the Paterson plant, 20,000 more pounds of fresh vegetables and 31,000 more pounds of fresh fruit were served than the total canned vegetables and fruit served in the same month.

The National Nutrition Program has brought about the development of mobile cafeterias. They are specially-built trailers on standard automobile undercarriages and are easily towed by an average-size car. Two men can handle the whole job of moving the unit from section to section in the plant and serving the food from two electrically-heated steam tables, four five-gallon thermos urns, and two soup containers. One of these "vitamin vans," as they are called in a Pittsburgh plant, feeds 1,000 persons in 30 minutes.

Wartime nutrition schools, food demonstrations, and club meetings, supplement the factory cafeteria part of the nutrition program. These schools, conducted in plants and communities with the cooperation of industry, teach war workers, their wives, and mothers how to cook for men on the home front. Many times they have to break down long-time prejudices to get their ideas across. One woman, after disputing the nutritionist's idea that potatoes would taste better if cooked in only a small amount of water, returned the next day to offer a testimonial to the "new" idea.

"My husband wanted to know where I got these new, tastier potatoes," she said. "He said I should get that kind from the grocer every time from now on. After that, I'm willing to try anything you say!"

Instructors in these schools show why war workers need breakfasts of fresh fruit or fruit juice, cereal, eggs, liver or scrapple or cheese, enriched or whole wheat toast or muffins of whole grain flour, butter of fortified margarine and coffee. A "doughnut-and-coffee" snack grabbed on the run outside the plant won't carry a worker through the morning, the nutritionists explain.

Courses are given in packing lunchboxes. Instructors offer recipes for sandwich fillings of chopped, dried beef and egg, chopped liver, or roast beef, sardine and onion, tomato and lettuce, cheese and lettuce. Combinations of these, on daily menus consisting of one meat or fish sandwich and another of cheese; milk, and orange, grapefruit or tomato juice, are outlined as nutritive and healthful substitutes where hot meals could not be obtained. Recipe books and leaflets are distributed in class.

The Nutrition Program, ssy ODHWS officials, is no attempt to make the natio' labor force "vitamin-conscious," but a plan to develop health and productive facilities of the United States by the best use of available foods.

UNION LABEL FEATURE SERVICE

UNION LABEL TRADES DEPARTMENT
I. M. ORNBURN, Secretary-Treasurer
AMERICAN FEDERATION OF LABOR WASHINGTON, D. C.

nutrition

Release No. 33 for week ending January 23, 1943.

NUTRITION AND LABOR

The Why and What of a Breakfast

Interest in food has shifted from the theoretical level to the practical. The extension of rationing, the more frequent occurrence of shortages, the disappearance from the store shelves of favorite items, the rise in prices of many commodities -- all these changes bring food consciousness to every American home. In addition, the constantly changing food picture requires food alertness in order to make the best of the situation prevailing at the moment. Food is a mighty war weapon but we need nutrition information to teach us how to take care of that weapon and how to use it well.

To develop this alertness in labor, I. M. Ornburn, Secretary-Treasurer, Union Label Trades Department of the American Federation of Labor, in cooperation with the Nutrition in Industry Section of the Nutrition Division of the Office of Defense Health and Welfare Services, is supplying information of immediate value to every housewife, to every worker and to every mother. This information will contain the latest nutrition knowledge and will take into full account the current picture of rationing, availability, cost, seasons, nutritional value, transportation facilities and similar elements which the war brings into play. By following these articles, every reader can learn to keep fit in health and morale, do his job in our struggle for survival, have a patriotically efficient kitchen, save by spending wisely and serve nutritious and delicious meals.

Here are typically poor breakfasts unfortunately quite common in many American homes and restaurants.

POOR - Fried potatoes, Pone, Corn syrup, Coffee.
Pastry or Doughnut, Coffee.
Toast and Jam, Coffee.

Compare these with the following breakfasts recommended by the Office of Defense Health and Welfare Services.

RECOMMENDED -

1. Choice - orange, half grapefruit or large glass of tomato juice.
2. Oatmeal or any other whole meal or restored cereal with milk.
3. Egg, cheese or meat with whole wheat or enriched white bread, fresh or toasted, spread with butter or fortified margarine, and
4. Coffee.

The difference between these two breakfasts does not depend chiefly on quantity. What really makes the poor ones poor is their lack of balance.

What do we mean by balance? This question will come up again and again and will be better understood as we go along. Let us first explain what an adequate breakfast must offer.

First, it provides us with at least one-third of all the elements which we require daily for perfect nutrition.

Second, it provides those items which we traditionally reserve for breakfasts and which, if skipped, are frequently not made up at other meals. Fruit or fruit juices supplying precious vitamin C belong in this category. We may have a glass of tomato juice with supper, or coleslaw with our lunch, but unless we have had some citrus fruit or juice, or tomato or tomato juice in our breakfast as well, our vitamin C requirements will not have been met.

Third, it provides us with cereal requiring milk, both of which many adults are likely not to replace in other meals. These items supply us with "B" vitamins, calcium, iron, starch (sugar) and proteins. An egg or cheese and bread and butter serve to complete our needs in other vitamins, proteins, minerals and fat. No essential item of diet, mineral, vitamin or food constituent is omitted. Such a breakfast is balanced and complete and a man can work on it and prosper.

The intelligent reader can now figure out for himself why the poor breakfasts are poor. Another stimulating exercise would be to calculate what kind of lunch one would have to consume to make up for ignorance, carelessness or delinquency at breakfast.

(The subject for next week will be "Lunch".)

UNITED STATES MARITIME COMMISSION

Washington 25, 1943

To all Regional Directors of Construction

Subject: Shipyard Feeding - Preliminary Report

1. Attached hereto please find the preliminary report and recommendations on shipyard feeding, compiled by Mr. Horace D. Willis, our consultant on this matter, for the purpose of affording the Maritime Commission the opportunity to consider the extent to which it desires as a matter of policy to outline the respective responsibilities of the Commission and its contractors in the feeding of employees.

2. It is to be distinctly understood that presentation of this preliminary data is not to be construed as the presentation of a final report to the Commission, but that the attachment is being distributed for the purpose of obtaining at the earliest possible moment the reactions of interested persons, to the end that when the final report is presented to the Commission for action, as broad a viewpoint on the problem as possible will be afforded.

3. It is intended, when the final report is made, to include in the submission to the Commission:

(a) The final report, recommendations and comments of Mr. Willis

(b) The specific recommendations and comments of this Division

(c) All germane comments and/or criticisms by other interested parties to whom this has been circulated.

4. The passing of each week finds the problem of feeding shipyard workers increasing in scope and intensity and the need for a prompt, common sense and practical solution of the matter is imperative.

(Sgd.) DANIEL S. RING
Daniel S. Ring
Director
Division of Shipyard Labor Relations

Attachment
September 28, 1943

September 27, 1943

To: Mr. Daniel S. Ring, Director
Division of Shipyard Labor Relations

Subject: Report and Recommendations on Shipyard Feeding

This report is based on facts and findings from my recent survey of the various shipyards, thirty-six, throughout the nation. The cordiality and cooperation extended to me was much appreciated.

There are a few individuals who are not entirely in accord with the program of in-plant feeding. A man who carried a lunch pail all his life thinks others should do the same today. However, the present emergency has brought about a change in the feeding habits of all.

On the whole, the food concessioners are doing a splendid job under adverse conditions. They are faced with grave problems of shortage of help, food, supplies, rationing and transportation. It is my belief the day has come to recognize the food operators as an essential part of the shipbuilding program and not profiteers. Assistance should be given these people by the shipyards, instead of constant criticism. (See attached 15-point program.)

The Office of Price Administration has issued statements on several occasions supporting the in-plant feeding program. This, in reality, is a method by which the workers may supplement their present weekly ration allowance. In other words, a form of differential rationing.

At present, many of the yards have elaborate cafeterias located outside the gates. This, of course, means that only the administrative forces with their one hour lunch period may patronize them. The worker in almost every case cannot leave the yard, due to his twenty to thirty minute lunch period. It is my personal opinion the men should be allowed forty-five minutes for their lunch, so they may obtain their food and consume it properly. Furthermore, a staggering of lunch hours would increase the use of the facilities, save on critical materials, speed up the service and reduce the number of employees needed to operate the feeding units. (See proposed plan of staggering now in effect at Delta.)

Good point

As a result of this cross country survey, I am firmly convinced that cafeterias do not meet the requirements of mass shipyard feeding. Our objective is to bring the food to the workers and not the workers to the food. However, where we have cafeterias, it will be possible to utilize them in this program by adding a few more steam kettles, pressure cookers, work benches, refrigeration space, and possibly more dry storage space. In many instances, no more equipment will be needed.

The ideal arrangement for mass feeding of the workers would be to prepare the food in a centralized kitchen and dispense by the method of mobile units and/or stationary canteens located in the yard. Preferably, the mobile unit is by far the best method. However, where we have wooden canteens, in a clean, sanitary condition, free from roaches and vermin, there is no need of converting to mobile units, except in congested shipyards. Recommended plan and procedure of operations outlined as follows:

MOBILE UNITS

1. Cost of Original Investment

The estimated cost of one of these mobile units complete with steam tables, cream urns, hot food containers, wheels and tires, is around $2,000. Using two to four lines of service at the rate of ten per minute per line, it is estimated that no more than ten of these units would be needed in the largest yard we have. This means a maximum total investment for ten units, of approximately $20,000. Assuming we had no cafeteria, nor kitchen, I do not believe it would cost more than $50,000 to construct and equip a centralized kitchen. This represents a substantial saving over the money that has been invested in constructing elaborate cafeterias, some costing a quarter of a million dollars, which have not provided a satisfactory method for feeding the shipyard workers.

2. Preparation and Handling of Food

The food must be prepared under sanitary conditions in a centralized kitchen. It is further recommended that a dietitian be employed to see that the meals prepared contain the maximum nutritional requirements. Regional offices of the Food Distribution Administration are willing and able to assist along these lines.

After the food has been prepared, it is then put into pre-heated vacuum containers where it remains hot until time of service. From actual tests, it has been found hot from four to five hours after filling. The food in the vacuum cans may be identified by use of a tag or color marking.

3. Mobility

The mobile wagons can be so arranged at the loading platform of the central kitchen, that it requires very little time and labor to load the food on them.

After loading the wagon, they are ready for distribution to the various stations in the yard. Four or five units may be attached, one behind the other, and towed by a tractor or truck. After locating the wagon, the servers can set up the unit in a very few minutes.

It is also possible to get small mobile units made with hooks attached, so that a gantry could pick it up and place it in the hulls. One person would be sufficient to do the serving.

4. Method of Service

One side of the unit could be used for serving hot foods and beverages and the other for sandwiches, beverages, etc., resulting in faster service. Only one entree would be sold, thereby eliminating the usual waste of time taken by individuals trying to make a choice, as is the case in cafeterias.

Paper containers, cups, and wooden spoons and forks would be used in serving the food. It is my understanding that the War Production Board is about to issue a directive in regards to those items, giving the industrial plants a priority or preference in obtaining these goods.

5. Cleanliness

The metal mobile unit is by far the most sanitary method of food handling, because it can be hosed down with hot water and steam cleaned with live steam. This, by the way, is the only sure way I know of to eliminate roaches and other vermin.

Furthermore, due to the fact that these units are brought back to the centralized kitchen after the meal is over, it makes it easier for the food operator to supervise the cleaning and check the surplus food left from each meal.

6. Labor Cost of Operation

From two to four girls, depending on the number of service lines used, are all that is required per unit. These same employees would be used in the central kitchen preparing sandwiches, salads and box lunches, thereby utilizing most of the labor hours. However, with the present shortage of labor, it is recommended that the feeding periods be staggered to further utilize the hours of the employees needed to operate these units.

For example: One mobile unit could be used through two or three meal periods, where they are staggered.

Part time employees furnished by the shipyard would further help out in this day of labor shortage.

7. Saving Man Hours

Using these mobile units saves on man hours lost, for after the meal hour is over, the unit is towed away, eliminating an excuse for loitering. It is further recommended that where cafeterias in the yard are supplemented by mobile units, the cafeterias should be closed between designated feeding periods.

8. Shelters

It has been suggested that simple quarters be made available to the men enabling them to sit down to eat their lunch. Knowing the limited amount of space in these yards, it is suggested that portable units could be constructed and, where feasible, benches accommodating 150 to 200 men constructed in such a way that they could be placed close to the mobile units, and, after the meal hour, be removed by cranes and placed out of the way of production.

These portable shelters could even be placed in the roadways during these periods because, as far as I have seen, there is practically no traffic at this time.

9. Health Requirements

Make it mandatory that all employees working in food concessions be examined thoroughly every three months, whether they are in a State that requires health certificates or not. This further protects the health of the shipyard workers and reduces the liability of food contamination.

The shipyard medical department should be held responsible for making periodical (weekly) inspections of the entire feeding operation. Should conditions be found under standard requirements as a result of labor shortage, every effort must be expended to correct the deficiencies by having the shipyard supply porter service to assist the operator.

10. Government Agencies Involved

From the conferences I have had with the various Government Agencies involved, such as Agriculture (FDA), WPB, WMC, and OPA, I feel quite sure we can count on their entire cooperation in this proposed program. The responsibility now appears to be ours.

In conclusion, the basic principles and plan upon which this program should be administered are as follows:

a. A definite policy should be established and a directive issued by the Maritime Commission stating its requirements and responsibilities in all matters pertaining to in-plant feeding.

b. Relieve the Regional Directors of Construction of all responsibility in regard to feeding and delegate authority to enforce these requirements to the Director of the Division of Shipyard Labor Relations.

c. It is further recommended that a qualified restauranteur be appointed Chief Food Consultant to work with the Director of the Division of Shipyard Labor Relations. His duties would be to carry out the program and recommendations emanating from the Washington office.

d. Appoint four assistants to the Chief Food Consultant and place one in each region. Due to the area and number of yards to be covered, it may also be necessary to have district or area men.

The duties of these regional men would be supervising the shipyard feeding and carrying out the orders transmitted from the Director in Washington, assisting the concessioners in every way possible to make the operation a success, and making recommendations.

e. To attain the ultimate objective of a successful feeding program, complete cooperation of all departments and personnel must be assured. Along these lines, I strongly recommend the establishment of in-plant feeding committees as one of the requirements to be made by the United States Maritime Commission. These committees should be comprised of members representing Maritime Commission (Resident Plant Engineer), labor, management, food concessioner and medical department. Their responsibility would be to receive and act upon all complaints in the feeding and make the necessary recommendations for the improvement of the operation.

Respectfully submitted for your immediate consideration.

(Sgd.) HORACE D. WILLIS
Horace D. Willis
Chief Feeding Consultant

"ACT NOW - TIME IS SHORT"

DELTA SHIPBUILDING COMPANY, INC.

FROM: Mr. John R. Davis, Personnel Director DATE: Aug. 20, 1943

TO: Mr. Clyburn

FIRST SHIFT

First Eating Period 11:00 A.M. to 11:30 A.M. in the West Side Cafeteria
All Iron Workers from the Wet Dock

First Eating Period in the West Side Mess Hall 11:00 A.M. to 11:30 A.M.
All Pipefitters on the West Side

Second Eating Period 11:45 to 12:15 P.M. in the West Side Cafeteria
Eagle Asbestos
Outfitting Warehouse
John C. Knipp

Second Eating Period 11:45 to 12:15 P.M. in the West Side Mess Hall
Shop #5
Shop #6
Way #5
Way #6
All Rigging and Crane Departments not otherwise taken care of.

Third Eating Period 12:30 P.M. to 1:00 P.M. in the West Side Cafeteria
Way #7
Way #8
Machinist

Third Eating Period 12:30 to 1:00 P.M. in the West Side Mess Hall
Shop #7
Shop #8

DELTA SHIPBUILDING COMPANY, INC.

FROM: Mr. John R. Davis, Personnel Director DATE: Aug. 20, 1943

TO: Mr. Clyburn

SECOND SHIFT

First Eating Period 6:30 P.M. to 7:00 P.M. in the West Side Mess Hall
Shop #5
Shop #6
Way #5
Way #6

Second Eating Period 7:15 P.M. to 7:45 P.M. in the West Side Cafeteria
All Iron Workers on the Wet Dock
All Electrical Workers

First Eating Period 7:15 P.M. to 7:45 P.M. in the West Side Mess Hall
All Pipefitters
All Boilermakers
All Riggers not otherwise taken care of

Second Eating Period 8:00 P.M. to 8:30 P.M. in the West Side Mess Hall
Shop #7
Shop #8

Second Eating Period 8:00 P.M. to 8:30 P.M. West Side Cafeteria
Way #7
Way #8
Machinists

DELTA SHIPBUILDING COMPANY, INC.

FROM: Mr. John R. Davis, Personnel Director DATE: Aug. 20, 1943

TO: Mr. Clyburn

THIRD SHIFT

First Eating Period 2:15 A.M. to 2:45 A.M. in the West Side Cafeteria
Shop #5
Shop #6
Way #5
Way #6

Second Eating Period 3:00 A.M. to 3:30 A.M. in the West Side Cafeteria
Wet Dock (Except painters)
Carpenters
Machinists
Electricians
(Everybody but painters and maintenance)

Third Eating Period 3:45 A.M. to 4:15 A.M. in the West Side Cafeteria
Shop #7
Shop #8
Way #7
Way #8

Eating Period from 3:00 A.M. to 3:30 A.M. in the West Side Cafeteria
None

The following men eat when and where the department in which they are working eats
All Electricians in the Electrical Shop
All Sheet Metal Workers
Electrical Maintenance
Pipe Welders
All Boilermakers
All Painters
All Tanktesters
All Carpenters
Plastic Armour
Steel Stock
Field Engineers
Production Checkers
Gauging Gang

RECOMMENDATIONS TO BE CARRIED OUT IN SHIPYARD

FEEDING PROGRAM

It is difficult to recommend a standard system for in-plant feeding, due to the physical differences in the various shipyards. There are, however, certain basic principles necessary for establishing a satisfactory policy, by which shipyard workers may be fed efficiently.

The success of this program hinges on the complete cooperation of the Maritime Commission, management, labor, food concessionaire, and the medical department.

Having made a personal survey of all the shipyards on the West Coast and the Gulf Area, I submit the following recommendations, as being applicable to all shipyards.

1. Set up an in-plant feeding committee, comprised of members representing Maritime Commission, (Resident Plant Engineer), labor, management, food concession and the medical department. This committee to receive and act upon all complaints or grievances, and make recommendations for the improvement of the operation.

2. Stagger lunch hours to enable every worker to obtain a satisfactory hot meal with sufficient time to consume it.

3. Set aside ten or fifteen minutes in between meals for a snack or a pick-up. During cold weather, a hot drink, such as a cup of coffee acts as a stimulant to an out-door worker.

4. Have one centralized kitchen equipped with adequate facilities, refrigeration space, dry storage, and workroom for the preparation of hot meals and sandwiches.

5. Give men balanced diets to meet their nutritional needs. (Employ a dietitian when possible.)

6. Avail yourself of the facilities offered by the Food Distribution Administration, who have Regional Nutrition Representatives able and willing to assist at any time.

7. Use mobile wagons or stationary canteens for decentralized feeding methods, whichever meets your needs. (See (a) and (b) below.)

    (a) Use mobile wagons in congested yards.

    1. Have electricity wired to location where mobile units are to be stationed.

    2. Fasten hooks to the mobile units so that they may be lifted by the gantries into the hull of the ship.

3. Place railings along both sides of wagon to keep men in line.

4. Post guards nearby to maintain order.

5. Have signs posted on wagons stating prices and kind of food to be sold.

6. Have signs requesting men to have their money ready for the cashier.

7. Provide trash barrels handy to location for refuse.

8. Provide shelters of canvas or wood which can be moved about by cranes or gantries for the men to get under in inclement weather.

9. Build permanent shelters with tables and benches if space permits.

(b) Use stationary canteens if there is available space.

1. Equip with water lines, electricity, steam lines and sinks.

2. Place railings along both sides with a shelf running along the side of the canteen.

3. Place railings along both sides of canteen to keep men in line.

4. Post guards nearby to maintain order.

5. Have signs posted on canteens stating prices and kind of food to be sold.

6. Have signs requesting men to have their money ready for the cashier.

7. Provide trash barrels handy to location for refuse.

8. Provide shelters of canvas or wood which can be moved about by cranes or gantries for the men to get under in inclement weather.

8. Use shipyard employees as part time workers in the canteens during the lunch hours. This has already worked out very successfully in many yards.

9. Contract for the services of exterminators to eliminate rodents and vermin.

10. Arrange for periodical inspections of the feeding facilities by the medical departments of the yards.

11. Maintain the proper working order of all facilities used in connection with the food.

12. Candy and beverage vending machines should be installed throughout the yards for the convenience of workers.

13. Due to shortage in manpower, porter service should be supplied by the yard to assist the food operator in keeping the buildings and grounds in a sanitary condition.

14. Place trucks at the disposal of food operator for the purpose of delivering merchandise from the main kitchen to the canteens and mobile units.

15. It is essential that hot foods be made available to the men at the mobile units and canteens. The only exception to this would be during the extreme heat, when cold plates and sandwiches could be featured.

In the preparation of hot foods to be sold in the yard it should be kept in mind that food in a sauce or gravy retains its heat longer. For Example:-

Beef Stew
Lamb Stew
Kidney Stew
Beef and Kidney Stew
Escalloped Fish
Tamale Pie
Chile Con Carne
Corned Beef Hash
Meat Balls and Spaghetti
Meat Balls and Macaroni
Baked Beans
Frankfurters and Beans
Fish Cakes and Beans
Fish, Clam or Corn Chowder
Chicken and Noodles
Beef Tips and Noodles

etc.

A booklet entitled "Planning Meals for Industrial Workers" put out by the United States Department of Agriculture, Food Distribution Administration, is full of sound practical suggestions.

"ACT NOW - TIME IS SHORT"

THE WASHINGTON DAILY NEWS

AUGUST 25 - 1943

Feed Workers in Plants, New U. S. Program

By ANN STEVICK

Among the steps that may be taken to keep our production army well fed as the food situation gets more complicated is to increase in-plant feeding of war workers.

About 20 per cent of our workers are now reached by the in-plant feeding program, which is nearly as great a percentage as England has, altho she had a head start. The Department of Agriculture hopes, in the next six months to approach double this percentage thru a vigorous educational campaign with employers.

Food supplies, distribution and that old Black Market come under more efficient control with large-unit feeding. It benefits not only the worker, but the congested community in which he lives. However, there are a good many problems, such as getting equipment and funds allocated. It might be possible for the Lanham Act to be interpreted so that its funds could be used for such purposes in communities where present facilities are inadequate.

The War Production Board, which dosn't dabble in nutrition except as it directly concerns concrete production figures, has experimented with in-plant vitamin feeding. WPB has tried serving vitamin-enriched lemonade and cookies to workers in war plants in a short afternoon rest interlude. They say that 97 per cent of the workers take the food, which is offered free, and that production figures show a satisfactory increase. Their plans for developing the program are not complete, but it is likely that they will soon be recommending the plan to more war plants.

MVR

Weekly Neighborhood Dinners Help Solve Menu Problems

March 23 1943

By Ethel M. Eaton

Written for The Christian Science Monitor

Since dim-out regulations and gas rationing restrict our usual evening activities to a large degree, we are now seeking our recreation in our own homes or those of near-by friends. A small group of professional women in our neighborhood has devised a popular means of co-operative meal-planning once a week.

It all came about in a most casual way. We were discussing the general food situation (the all-important subject wherever women gather nowadays!) and one of the group extended an invitation to the others to come to her apartment for dinner. "We'd love to come, but do let us bring something," was the response.

We now plan definitely for a once-a-week get-together, deciding each time, as far as is possible, what foods will be served at the dinner-meeting for the following week.

Since most of us are busy, in one way or another, during the day, our menus must necessarily be simple and consist, in general, of dishes that do not consume too much time in preparation or which may be partly prepared the day before. The following are typical:

Menu No. 1

Grapefruit and Cranberry Juice
Macaroni Special Grape Jelly
Watercress, Green Pepper, Tomato Salad
French Dressing
Mock Cherry Pie Cheese

Menu No. 2

Hot Tomato Bouillon
Oysters Scalloped with Cheese
Avocado and Red Cabbage Salad
Roquefort Dressing Ice Box Rolls
Apricot Upside-Down Cake

Menu No. 3

Lime and Pineapple Juice
Chicken Livers with Brown Rice
Endive and Orange Salad French Dressing
Corn Bread Jelly
Fresh Raspberry Whip Custard Sauce
Little Cakes

The hostess usually prepares the salad, since it must be kept crisp in the ice box and because salads in general aren't easily transported. If hot bread is on the menu, she makes this, too. (Salads and breads are usually surprises.)

Here are recipes for a few of the dishes which have proved most popular.

Avocado and Red Cabbage Salad

1 large avocado
5 cups red cabbage shredded
4 tablespoons chopped onion
1 cup diced celery
2 hard-cooked eggs
Lemon juice

Peel, remove stone and dice avocado and soak in lemon juice. Drain and combine with other ingredients except the eggs. Toss gently with dressing and garnish with egg slices. (Substitute blue cheese for Roquefort in the dressing.)

The dressing is made by beating into French dressing two tablespoonfuls or more of crumbled blue cheese.

Macaroni Special

Bacon
Cooked macaroni
½ pound strong cheese, cut in small cubes
Butter or margarine

Sauce

Combine:
¾ cup tomato soup, undiluted
¼ cup milk or cream, sweet or sour
1 medium-sized onion, chopped fine with a garlic clove
2 dashes Tabasco or Worcestershire sauce

(The flavor of the sauce is improved if made ahead of time.)

Cut bacon slices into fourths and line the sides of a buttered casserole, bringing them to the top of the dish. Put a generous piece of butter or margarine in the bottom of the dish and cover with bits of cheese. Cover with sauce and over all place a layer of macaroni. Continue in this order until the dish is full. On top have a generous layer of cheese and bits of butter or margarine. Bake from 15 to 20 minutes at 350 degrees. Serves four generously.

Fresh Raspberry Whip

1 cup crushed fresh raspberries, sweetened (use frosted berries)
2 tablespoons sugar
2 egg whites

Beat egg whites until foamy. Add sugar gradually and continue to beat until egg whites stand in peaks. Fold in raspberries. Serve with custard sauce. Serves four.

Custard Sauce

3 egg yolks
¼ cup sugar
⅛ teaspoon salt
2 cups milk

Beat egg yolks lightly, add sugar and salt. Scald the milk and stir slowly into the egg mixture. Place in the top of a double boiler over a slow fire and cook only until it begins to thicken. Remove from fire and add 1 teaspoon vanilla or ½ teaspoon grated lemon rind. Chill thoroughly before using.

warning, once more urged that wage levels be held, that farm parity be retained, appealed to Congress "to confine itself to one bloc—a national bloc," reiterated arguments against the inflationary spiral, and specifically requested legislation to "collect not less than $16,000,000,000 of additional funds by taxation, savings, or both, during the fiscal year 1944."

That, in brief, is the goal set by the President. Now—what has been done?

Prentiss Brown, who has replaced Leon Henderson, declares that, at best, cost-of-living increases cannot be wholly stopped, and he hopes they can be held to one-half per cent a month.

Pressure for wage increases is gathering headway. John L. Lewis' miners seek a $2 a day increase; demand for revision of the "Little Steel Formula," limiting WLB wage increases to no more than 15 per cent over Jan. 1, 1941, is coming both from A. F. of L. and C. I. O.

The House has passed and the Senate will probably pass this week legislation modifying farm parity to increase farmers' prices, and raise the all-around living cost.

Congress, rightly or wrongly, is in the course of repealing Mr. Roosevelt's $25,000-salary ceiling

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The Country Speaks: (

'Straw in Your Hair—In the Public Square" . . . .

A bit of rural America has come to the metropolis. A lot of farm-bred city folks who used to drive out into the country on Saturday nights to take in the old-time square dances at "the corners" can't do so any more, because of gasoline rationing. So, in Cleveland at least, they've hired a hall right in the city—in the heavily industrialized urban center which hasn't heard "The Irish Washerwoman" for years.

Yes, it's been a long, long time since it was a regular thing for dance callers to stand on a Cleveland dance floor and shout, while the fiddlers fiddled:

> "Jump right up, and when you come down
> The holler of your foot leaves a hole in the ground,
> And turn your honey 'round and 'round!"

Back in the canal-boat era, or thereabouts, this community was not above such rural goings-on. But for more than a century now Cleveland has been busy growing into a bigger and bigger city, and getting quite sophisticated in the process. Too much so, unfortunately—for these jolly, rustic, boisterous dances were eventually considered to belong out in the old barn, or down the country turnpike at the one-room township schoolhouse.

If there were still some people in town who insisted it was more fun to dance to "Shuck the oyster and duck the shell"—well, let them hie themselves out to the country, where such things belonged. But never in the city!

There was no need, however, for any social code on this point. Part of the fun in going to square dances—at least for an urban dweller—was in getting out of the stuffy city into the country again, even if for no longer than an evening. There might be a hayride party, too. And as for the dancing,

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> meet!"

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To Change the Subject

Civilians in the Front Line . . . .

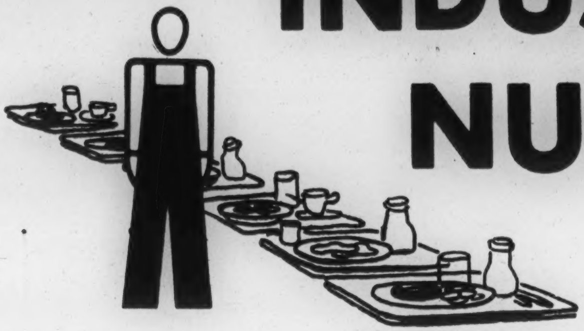
"A thousand nights I walked the shore—in every kind of weather—in the

panic exodus (fro

NUTRITION 1944

MONTHLY

INDUSTRIAL NUTRITION SERVICE



For employee publications, and individuals and groups promoting nutrition education

WAR FOOD ADMINISTRATION, Office of Distribution

December, 1944 No. 3

NUTRITIOUS MIDSHIFT MEAL FOR FACTORY WORKERS PROMOTES EFFICIENT PRODUCTION

When the Nation calls for production, more and more production, stop just long enough to remember two facts: First, that factory workers behind our fighting men behind the guns at all fronts perform a key role in the great offensive. Second that a hearty, midshift meal is one of the best ways to keep production efficiency at its peak -- it is one of the best ways to protect your health as well.

What the Nutritious Meal Does For You

Most of us think that good food is the food we like best. That may or may not be true. Sometimes the foods we like best lack some of the food value essential to buoyant, good health. If we are to have the drive and enthusiasm to work to capacity all day and have enough pep in reserve to enjoy our leisure time as well, we must choose the proper foods with care and forethought.

The following material may be obtained in quantity and without charge, individually or in sets, from the Regional Office of the War Food Administration, 150 Broadway, New York City.

1) YOUR EMPLOYEES ARE NO BETTER THAN THE FOOD THEY EAT--12 page pamphlet describing what an industry can do in promoting its own nutrition program.
2) POSTERS
   Eat the Basic 7 Every Day
   Avoid Fatigue
   Good Food Means Good Work
   Eat 3 Well-Balanced Meals Every Day
3) TABLE TENTS--Sets of 7 illustrating each of the 7 Basic Food Groups with cartoons.

What Must We Eat To Be Well-Fed?

In order to be well-fed we must have enough of the right kinds of food every day. Besides calories we should choose the foods that supply the nutrients essential for good health. These are:

(Cont. on Page 2)

MIDSHIFT MEALS
(Cont. from Page 1)

1. One or more servings of protein-rich food such as meat, fish, poultry, cheese, eggs, dry beans and peas, and nuts.

2. One pint of milk to supply calcium -- cheese and green leafy vegetables are good sources too.

3. A whole-grain or enriched cereal and an egg will help to meet the iron requirement. Meat and dry beans and peas also are good sources of this mineral.

4. One or more servings of leafy green and yellow vegetables will furnish vitamin A, as will butter, fortified margarine, and eggs.

5. Liver, kidney, lean pork, dry beans and peas, and whole-grain cereals are excellent sources of the B vitamins. Eggs and milk also contribute to the supply of these vitamins.

6. Choose a serving of citrus fruits and/or tomatoes every day for vitamin C. Leafy green vegetables, green peppers, cantaloups, strawberries, and potatoes also are sources of this vitamin.

Enriched Bread Best

For that added health protection this is important: make certain that all the white bread and rolls you eat are enriched, that cereals are whole-grain or enriched, and that margarine is fortified. Table salt should be iodized.

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HOW TO GET ADEQUATE MEALS ON THE JOB

In many plants, a low-cost, vitamin-rich lunch special is offered daily, and this is usually the surest way to get the right selection of foods. If properly planned, the lunch special follows this general food pattern:

Main protein-rich dish
  (made from meat, fish, poultry, cheese, eggs, dry beans, or peas).
Potatoes (or another starchy vegetable).
Green or yellow vegetable (cooked or raw)
Enriched or whole-wheat breadstuff.
Butter or vitamin A-fortified margarine.
Milk.
Dessert (preferably containing milk or eggs).

A lunch special consisting of a generous serving of each of these foods should provide you with one-third of your daily food requirements except vitamin C. If citrus fruit juice, tomato juice, or a leafy vegetable salad is included, the nutritional value of the lunch is further improved. The vitamin C-wise worker will remember to have for breakfast each morning tomato juice or citrus fruit or juice to make certain he has a good start on his daily requirement of that previous vitamin.

Is a Satisfying Meal Always A Nutritious Meal?

Workers not aware of food value might choose these popular foods:

(Cont. on Page 3)

NUTRITIOUS MEAL

(Cont. from Page.2)

Hot roast beef sandwich
with gravy
Mashed potatoes
Stewed white corn
Apple pie - Coffee

This is a substantial, filling meal which provides a protein-rich main dish, potatoes, bread and a fruit dessert. But what does it lack? Calcium is missing, the amount of vitamins A and C is inadequate, and there is not nearly enough of the B vitamins.

By suggesting a few changes let us make this lunch into a more nutritious meal. It is not necessary to add more food items, nor does it need to cost more:

Pot Roast of Beef with gravy
Steamed whole potatoes
Tossed green salad
Whole-wheat rolls
Butter or fortified margarine
Custard pie
Milk

In this lunch the leafy green salad is rich in vitamin A and supplies some vitamin C; the milk furnishes calcium that is missing in the other lunch; the whole-wheat rolls and the milk add additional B vitamins , and the steam potatoes contain more vitamin C than the mashed potatoes.

More workers with the "know how" on food selection are eating the lunch special. It is easy on the pocketbook and when carefully planned and prepared, provides the foods that mean health insurance.

MONTHLY

INDUSTRIAL NUTRITION SERVICE

WOMEN'S BUREAU
NOV 16 1944
DEPARTMENT OF LABOR

For employee publications, and individuals and groups promoting nutrition education

WAR FOOD ADMINISTRATION, Office of Distribution

November 11, 1944 No. 2

FROZEN FISH SUPPLY IS PLENTIFUL, ALTERNATIVE TO RATIONED MEATS

Now that the offensives in the Pacific area and Europe are stepped up, we on the homefront have an added incentive to increase our efforts to help win the war. One way we can do this is to make full use of the nutritious foods not needed by the military, thereby aiding our country to meet the changing conditions of food supplies on the homefront.

Very small quantities of frozen fish are used by our fighting forces overseas, because of refrigeration problems at the front. Today the supply of frozen fish in storage is so large that much must be removed before the new catch can be stored. We on the homefront could solve this problem quickly and simply if we were to serve fish an additional time each week until the supplies are normal again.

Freezing is a method perfected to keep foods fresh. Frozen fish tastes like fresh fish and has equal food value. Fish is not rationed and is a good alternate for the rationed meats.

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PLENTIFUL FOODS

Fresh vegetables which will be abundant throughout the Northeast Region during November are sweet potatoes, onions, beets, cabbage, celery, and small sized white potatoes.

Of the fresh fruits, apples will be plentiful.

Other foods that will be available in relative abundance, include: canned green beans; forzen vegetables and baked beans; dry-mix and dehydrated soups; soya flour, grits and flakes; peanut butter, apple butter, citrus marmalade, jams (except berry varieties) and jellies; wheat flour and bread; macaroni, spaghetti, and noodles; oatmeal.

Supply On Hand

Not all fish is plentiful. Among the varieties of frozen fish available in supplies greatly above normal, are frozen cod fillets, mackerel, flounders, scup, pike and lake herring. The bulk of the supply is in fillets, which eliminate waste. (Cont. on Page 2)

Supply on Hand (Cont. from Page 1)

Most varieties of canned fish are scarce. Canned fish is used in large quantities by our military forces. About 70 percent of this year's pack of salmon is required for our military forces, for lend-lease, and for other Government purposes. More than half of the packs of sardines and mackerel also is being taken for Government use. Canned tuna fish is now back to normal supply levels, but the military demand for this product is considerable.

Fish Food Facts

Those who have the "know how" in cooking and serving fish can make it look and taste so good that everyone likes it. When properly cooked, fish is moist and delicious, not greasy or dry. Not all varieties of fish should be fried, although that is now the most common method of cooking fish. Mackerel, which is in surplus, is one of the fat varieties and is much better when baked or broiled. Cod, a lean fish, is better when boiled slowly, baked in milk or fried, rather than broiled.

The selection of colorful, nutritious vegetables and the use of color in serving fish, as in tomato sauce, or garnishes such as lemon slices and parsley, makes a fish meal appealing at home or in the cafeteria. Colorful vegetables for fish and potatoes are canned green string beans, now plentiful, spinach, stewed tomatoes, beets, green salads or cole slaw mixed with chopped green peppers and grated raw carrots or tomatoes.

Food Value

Fish makes an important contribution to the diet. It is an excellent source of high-quality protein; that is, all the amino acids required for growth and maintenance of weight are included. It is also an excellent source of niacin, which is one of the B complex vitamins.

War Food Administration, N.E. Reg.
Industrial Feeding Section
150 Broadway, New York 7, N.Y.

Methods of Cooking Fish

Baking: Cut into individual servings. Place in well-greased pan. Sprinkle with salt and brush with melted fat. Cook in hot oven (500°F.) until brown and thoroughly done, but not overdone. Lean fish may require added fat during cooking.

Boiling: Place one layer of fish cut to serving portions in an oiled wire basket or perforated pan, or wrap in cheese cloth to prevent breaking up. Place basket in 2 quarts of boiling water to which has been added 2 tablespoons salt, a tablespoon of vinegar or lemon juice, an onion and a clove. Simmer until tender (10 to 15 minutes). Serve on hot platter.

Broiling: Cut into individual serving portions. Oil heated broiler pan. Brush fish with melted fat. Place fish on broiler pan about 2 inches below heat, skin side up. Avoid too high temperature. Cook for approximately 5 minutes one one side, turn and broil about 4 minutes longer. Baste several times with a mixture of 1/4 cup melted fat and 1/4 teaspoon pepper.

Deep Fat Frying: Use a deep kettle provided with a frying basket. Heat fat to a temperature of 400° F. until a piece of bread will brown in 20 to 25 seconds in the hot fat. Dip fish cut to serving portions in cold water. Roll each portion in 1 cup of sifted dry crumbs or a mixture of 1/2 cup yellow cornmeal to 1/2 cup flour and 1 1/3 tablespoons salt. Put only one layer of fish in the basket at one time. Cook to an even golden brown and serve immediately.

Steaming; Place fish cut to serving portions for 2 to 8 minutes in a solution of 1/2 cup of salt to 1 t, quart of water. Place fish one layer deep in a well-oiled steamer and cook for 5 to 12 minutes or until tender.

Nutrition file

Chicago Daily News
10/15/44

CHAINS PREDICT EXPANSION IN FROZEN FOODS

Good news for the homemaker came from merchandising experts of the National Association of Food Chains meeting in the Drake Hotel today.

An expansion in frozen foods at lower prices is on the way, a development that will bring vineripened fruits and vegetables to the consumers tables with their freshness and quality unimpaired.

The food chains are working to get choice meats processed and packaged in the packing plants so the housewife may buy a sirloin steak or fresh pork roast wrapped with the seal and grade of the processor on the package.

Plan Frozen Meals

The frozen food industry is developing plans for marketing prepared meals ready for heating and serving - a boon to the small apartment dweller.

Frozen foods will have much wider distribution, in the opinion of Robert B. Rasmussen, president of National Tea Co., a point of view also held by Joseph B. Hall, vice-president of Kroger's.

And packaging of fresh meats in the packing plants under the processor's label and quality guarantee would be "Utopia," Rasmussen said.

No system has been developed, he explained, by which the housewife can buy meat with the same confidence with which she purchases coffee, butter and other packaged foods. So meat buying is wrapped up with the personal- consumer has no other choice than to buy from someone she can trust.

"Everyone in the industry would like to see that development," said Rasmussen, speaking of the improved meat merchandising plan. "We hope the trend will be in that direction."

Canned Food Mainstay.

Dehydrated foods will not become popular, the food experts believe, and they consider them a dead issue so far as the average city consumer is concerned.

There will be more dip waxing to preserve the freshness of vegetables. Frozen poultry ready for the frying pan will come into wider use, but canned foods will continue to be a mainstay despite the inroads of fresh and frozen fruits and vegetables, the chain food leaders believe.

"Everybody wants quality foods these days," observed one food store official. "It will be interesting to note whether the housewife goes back to her former buying habits after the war."

Number 4 September 8, 1944

INDUSTRIAL NUTRITION SERVICE

FROZEN FOODS

Frozen vegetables and frozen baked beans are on the War Food Administration's list of plentiful foods for September.

An increasing number of food service managers are becoming aware of the advantages of using frozen vegetables. Use of frozen vegetables is a labor-saving aid in meeting manpower shortages. Since these vegetables are cleaned and cut before they are frozen, their use saves many hours of preparation. Frozen vegetables require less cooking time than do fresh ones, and they provide a supply of such vegetables as green peas, and asparagus in months when these vegetables are not available in fresh form.

The nutritive value of frozen vegetables about equals that of the fresh vegetables usually used in institutional food service. Although the initial cost per pound of frozen vegetables may, in some cases, be higher than that of fresh vegetables, the cost per serving may be no more because of the reduced labor cost in preparation.

Food Value

Frozen baked beans are one of the relatively new products. They have about the same composition as canned or home-baked beans, and are a good source of protein, iron, and B vitamins.

Most vegetables are blanched before freezing and there is a slight vitamin loss in this process. The frozen product is apt to contain less vitamin C than the fresh product when it is in its best condition. However, the ease with which frozen vegetables can be held in the frozen state until cooking, and the short cooking time required for them can compensate, at least in part, for the original processing loss. Other nutrients, except vitamin C, are almost the same in frozen vegetables as in fresh ones.

Some of the large hospitals for rehabilitation of returning veterans are now using frozen vegetables in order to provide balanced diets while meeting labor shortages.

PLENTIFUL

Several varieties of nutritious fresh fruits and vegetables will be available in abundance during the present month.

Onions, tomatoes, and peaches are expected to be plentiful at the beginning of September, while cabbage will be particularly abundant during the latter part of the month.

Apples, pears, beets, snap beans, and white potatoes will also be easily obtained.

Other foods in relative abundance include canned green and wax beans; frozen vegetables and baked beans; peanut butter, citrus marmalade, grape jam; wheat flour and bread; oatmeal; macaroni, spaghetti, noodles; soya flour, grits and flakes.

Recipes for Frozen Vegetables

Frozen baked beans	100 servings		500 servings	
	Measure	Weight	Measure	Weight
Frozen baked beans		35 lbs.		170 lbs.
Salt pork, cubed		4 lbs.		18 lbs.
Mustard, dry		2 ounces		10 ounces
Sugar, granulated		1 lb.		5 lbs.
Molasses	1 pint		2½ quarts	

Size of portion = 6 ounces

Method:

1. Thaw the beans by letting stand over night in refrigerator at about 45° Fahrenheit, or at room temperature for 3 or 4 hours.
2. Mix the thawed beans with the seasonings.
3. Put beans into oiled baking pans.
4. Bake in a 350° F. oven for 1 hour or longer until the beans are thoroughly seasoned and browned.

Buttered frozen spinach	100 servings		500 servings	
	Measure	Weight	Measure	Weight
Frozen spinach		25 lbs.		125 lbs.
Water, boiling	3 qts. or less		3 gal. or less	
Salt		4 ounces		1 lb.
Butter or fortified margarine		1 lb.		5 lbs.

Size of portion = 3½ ounces drained.

Method:

1. Cover bottom of steam-jacketed kettle with just enough water to start the vegetable cooking. Add the salt and bring water to the boiling point.
2. Drop in spinach, one block at a time, so as to avoid stacking the blocks and to make sure that each block will be surrounded be steam.
3. Cover the kettle.
4. After 3 minutes or so open kettle and separate the meshed vegetables so that the leaves will cook evenly. Push any unthawed pieces toward the bottom of the kettle.
5. Cover the kettle and cook just until the leaves are tender.
6. Drain the spinach and season. Serve immediately.
7. Large quantities should be cooked on a staggered schedule throughout the serving period.

Ward: Ag 5606 AG-944

UNITED STATES DEPARTMENT OF AGRICULTURE

For Immediate Release
Tuesday, February 8, 1944

Cleared and Issued
Through Facilities of the
Office of War Information

Achievement of In-Plant Feeding Goal Foreseen

- - -

Rapid movement toward a goal to feed at least 60 percent of the nation's 20 million industrial workers on-the-job this year is foreseen by Lee Marshall, Director of Food Distribution, War Food Administration. Speaking before a joint meeting of the Labor Advisory and Inter-Agency committees in Washington, D.C., February 5, Marshall said cooperation of government, labor and management has already been established and "it should be possible to move rapidly ahead in achieving the goal of the industrial feeding program."

Marshall, chairman of the Inter-Agency committee which includes members of several Federal agencies, said in-plant feeding has resulted in production progress, especially in plants where production was lagging prior to the establishment of on-the-job feeding facilities.

The Labor Advisory committee stated labor is aware of the value of having food on the job and labor locals, especially in areas where labor turnover is great, are cooperating. Lack of food on the job is definitely one of the reasons for labor shortage and turnover, the committee pointed out. The War Food Administration reported some progress in establishing more on-the-job feeding facilities had already been made.

Main objectives of the government industrial feeding program are: (1) To exexpand industrial feeding facilities to an additional five and one-half million workers now employed where food on the job is not available. (2) To improve supplementary feeding in plants and areas already having good facilities.

Approximately six and one-half million workers now have an on-the-job food service available to them. Expansion of the program this year should result in general coverage of workers in industries in all areas where in-plant feeding is practicable.

WFA's Office of Distribution is surveying plants at the request of management and is making recommendations for the most practical types of food service. Already plants employing more than 2 million workers have been surveyed since the beginning of the year.

The Office of Distribution also is assisting in getting food to shortage areas and assisting in making adjustments in food plans in accordance with the availability of rationed and non-rationed foods.

Recommendations, plans, equipment lists and menu suggestions have been developed for different types of installations such as cafeterias, canteens, lunch stands and packed lunch services necessary to meet the needs of plants of different sizes and types of industries. These recommended standards will be made available for use throughout the country.

In-plant Feeding

ADVANCE RELEASE ---- ADVANCE RELEASE

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PM - 4514

WAR MANPOWER COMMISSION

ADVANCE RELEASE:
For Sunday Papers,
February 6, 1944.

Cleared and Issued
Through Facilities of the
Office of War Information

As part of its program to obtain maximum efficiency of labor and to keep workers on the job, the War Manpower Commission announced today its part in an industrial feeding program as a member of the Inter-Agency Committee on Food for Workers.

"The WMC's interest in the program," said Paul V. McNutt, Chairman, "is based upon an increasing belief that a good plant feeding program helps in the recruitment of workers, also in safeguarding their health and stamina, and affects directly production, morale, attendance and the continued employment of workers."

"Under the dislocations of war-time living, workers have become increasingly dependent on plant eating services." Mr. McNutt said. "It has been the policy and the definite responsibility of the WMC to assist in securing those in-plant services which affect the individual as a worker. The participation of the WMC in the industrial feeding program is in line with this general policy."

Under terms of an agreement approved by the Inter-Agency Committee on Food for Workers, the War Manpower Commission with the advice of member agencies will: (a) determine manpower requirements for the operation of necessary industrial eating service and production of industrial feeding equipment; (b) develop recruiting and training programs for workers in restaurants and in-plant food services where necessary; and (c) take necessary steps to stabilize employment in these fields.

Details of the WMC program to be worked out by the inter-agency committees in the field are:

A. At the time manpower utilization surveys are made, the WMC--after clearance with the Office of Distribution War Foods Administration, will investigate the adequacy of plant eating conditions in light of manpower needs; will discuss with plant representatives the relationship of absenteeism, turnover and production problems to eating conditions; and where necessary, will seek remedial action by the plant and by the several govenment agencies acting under the coordinated program established by the Inter-Agency Committee on Food for Workers.

B. In order to stabilize employment of workers needed in the manufacture and operation of industrial feeding facilities, the WMC field staff will consider the following actions:

(1) Workers in plant food services may be regarded as working in an Essential Activity if the service is considered part of an industrial establishment already on the list of Essential Activities.

(over)

(2) Workers in plant food service may be designated as "locally needed" if the service is not considered part of the establishment and is not included on the list of Essential Activities.

(3) Workers may be designated as "locally needed" in instances where the manufacture of industrial feeding equipment is not included on the list of Essential Activities.

Represented on the Inter-Agency Committee on Food for Workers are the Office of Distribution, War Food Administration, which has chief responsibility for coordinating activities of Federal agencies relating to industrial feeding; the War and Navy Departments, Maritime Commission, Office of Price Administration, War Production Board, Federal Works Agency, the U. S. Public Health Service, and WMC.

END OF ADVANCE RELEASE: For SUNDAY Papers, February 6, 1944.

Inplant Feeding

Ward: Ag 5606

AG-305
X-24763

UNITED STATES DEPARTMENT OF AGRICULTURE

For Immediate Release
Monday, January 10, 1944

WOMEN'S BUREAU
JAN 20 1944
DEPARTMENT OF LABOR

Cleared and Issued
Through Facilities of the
Office of War Information

In-Plant Feeding Expansion Planned in 1944

- - -

Organized labor groups met in Washington today (January 10) with Government officials to discuss plans for expansion of in-plant feeding facilities for the nation's industrial workers in 1944, the War Food Administration said today.

Because of wartime changes in food distribution and in working and living conditions, war workers are increasingly dependent upon in-plant feeding in order to maintain health and productive efficiency.

The American Federation of Labor, Congress of Industrial Organizations, Railroad Brotherhoods and United Mine Workers sent representatives to a meeting of the labor advisory committee of the Inter-Agency Committee on Food for Workers. This group will work with the Food Distribution Administration and the Inter-Agency committee.

To facilitate the program, the Office of Price Administration is now working out the last details of a plan for handling food allotments for war plant cafeterias and lunch rooms apart from other commercial eating establishments. This change will make it a fairly simple matter for war plants that expand their feeding programs to obtain the necessary adjustments in their food allowances. Reasonable prices will be maintained under price control regulations.

Roy F. Hendrickson, chairman of the Inter-Agency committee and director of th Food Distribution Administration, pointed out that some 6,500,000 workers are now employed in plants were food service is available. Before Pearl Harbor, on-the-job feeding services were afforded less than 20 per cent of the nation's industria workers. At present the total is 33 per cent, while the goal for 1944 is 60 per cent.

The 1944 increase in in-plant feeding would take care of an additional 5,500,000, leaving approximately 8,000,000 workers not receiving this service. Most of these 8,000,000 workers, however, are in plants where on-the-job feeding is neither practical nor feasible.

The Food Distribution Administration, through plans made today, will:

(Over)

1. Keep labor advised as to changes in policies required to meet adjustments in the food situation made necessary by war.

2. In cooperation with labor, develop understandings as to how problems can be solved in fairness to all and in the best interests of the war effort.

3. Make available to labor facilities and services of FDA and cooperatin agencies; to supply information, services and materials to aid workers in making the best use of available foods.

Labor was asked to consider:

1. Assuming responsibility for informing all locals as to the manner in which the program operates, its objectives and importance of proper feeding in maintaining health and productive efficiency.

2. Participating in the program by working with existing food committees; reporting conditions where industrial food services cannot be improved sufficiently through committee action; assisting in recruitment of cooks and other culinary workers; assisting in the solution of food service problems for workers in plants or industries where in-plant facilities may not be practical; assisting in the formulation of and gaining acceptance of the FDA food service standards and assisting in projects to help workers and their families make the best use of available foods.

3. Through the Labor Advisory Committee, formulating an over-all program for labor participation and functioning in an advisory capacity to the Inter-Agency committee at the Washington level and establishing similar cooperative procedures at regional and area levels.

Representatives of labor who attended the first meeting of the Labor Advisory Committee were: I.M. Ornburn, of the AFL; Russ Nixon, Donald Montgomery and Leo Goodman, of the CIO; John Mates, of the UMW; Fred W. Davis, of the Railroad Labor Executives' Association and Railroad Brotherhoods, and Martin H. Miller, of the Brotherhood of Railroad Trainmen.

The Inter-Agency committee, including representatives of FDA, the Office of Price Administration, War Production Board, War Manpower Commission, U. S. Public Health Service, Federal Works Agency, War and Navy Departments and the Maritime Commission, will advise on over-all policies affecting development of the industrial feeding program.

Saunders - 76538 WPB-4779

WAR PRODUCTION BOARD

For Immediate Release
Tuesday, January 4, 1944

Cleared and Issued
Through Facilities of the
Office of War Information

The War Production Board today released the text of a letter written by Chairman Donald M. Nelson to President Roosevelt, outlining the program which WPB has undertaken to provide cafeterias and other health facilities for workers in war plants.

Chairman Nelson's letter to the President was written in reply to one of December 22 in which Mr. Roosevelt directed the WPB to intensify its program for the establishment of adequate in-plant facilities for war workers. The President wrote similar letters to the Secretary of War, the Secretary of Navy, and the chairman of the U. S. Maritime Commission, stating that "in order to prevent unnecessary loss of man hours and productive effort in our essential industries and to increase the employment of women, it is my desire that your agency make the necessary funds and materials available for such facilities as may appropriately be installed in the plants and yards under your jurisdiction."

In his letter to the President, as released today, Mr. Nelson said that "additional instructions are being issued to our entire organization to approve such essential 'in-plant' facilities in war plants as cafeterias, rest rooms, toilets, and locker facilities when they are submitted by the War Department, Navy Department, or Maritime Commission."

Mr. Nelson informed the President that since last spring the Labor Production Division of WPB has been working particularly on the problem of providing hot meals for workers, and that an Administrative Order issued November 30, 1943, authorized the WPB Office of Civilian Requirements to make available all necessary equipment. "In announcing this program, I publicly called upon the management of war industries to provide or improve in-plant feeding facilities if adequate provision does not already exist," Mr. Nelson's letter said.

President Roosevelt, in his letter of last month, expressed his concern at the lack of proper cafeterias, rest rooms, toilets, and locker facilities in many plants. "I am informed that many war production plants are now badly in need of these facilities," the President said. "As a consequence much production is being lost by loss of time during working hours and through induced absenteeism. Employment of an increasing number of women in war production makes it even more important that such adequate and proper 'in-plant' facilities be installed soon."

The "in-plant feeding" program to which Mr. Nelson referred in his reply to President Roosevelt has been handled by the Industrial Health and Safety Section of the WPB Labor Production Office in cooperation with Food Distribution Administration of the War Food Administration and the Inter-Agency Committee on Food for Workers. Joseph D. Keenan, as WPB vice chairman in charge of Labor Production, has had general supervision of the program. Through an Office of Women Consultants, created last July, the WPB has also been attempting to obtain improvements in working conditions particularly affecting women war workers.

(over)

The WPB in-plant feeding program has been carried out in all instances where the procurement services of the War Department, Navy Department, or Maritime Commission have certified to the WPB Office of Civilian Requirements that such facilities are necessary for plants handling war contracts for the Service procurement agencies. The recent letters of President Roosevelt to the WPB and to the Services are expected to result in a great increase in the number of plants certified to the WPB as needing additional facilities.

The full text of Mr. Nelson's reply to President Roosevelt's letter of December 22 follows:

"December 23, 1943

"Dear Mr. President:

"Your letter of December 22, 1943 regarding 'in-plant' facilities in war plants is much appreciated. Because proper facilities such as cafeterias, rest rooms, toilets, and locker facilities are a prerequisite for maximum war production, the War Production Board some eighteen months ago established an Industrial Health and Safety Section in our Labor Production Division which has been working on these problems continuously with management and the procurement agencies. An Office of Women Consultants was established in order to work out problems that have arisen or become more acute because of the great increase in woman war workers. Last spring our Labor Production Division initiated an active program on 'in-plant feeding' in cooperation with other agencies and this has been formalized in the War Production Board by an Administrative Order dated November 30, 1943 which designates our Office of Civilian Requirements as the claimant agency responsible for making available the equipment necessary. In announcing this program, I publicly called upon the management of war industries to provide or improve in-plant feeding facilities if adequate provision does not already exist.

"Through these activities we have been successful in many cases in inducing management and the procurement agencies to take remedial steps. As a result of the forward-looking action you have taken, we feel sure that the entire program will be advanced immeasurably to the benefit of war production.

"In-plant facilities in war plants have always been considerd by our Industry Divisions and Facilities Bureau as 'essential for the war effort' and therefore eligible for construction during war time. To my knowledge there have been no deserving cases where applications for necessary facilities of this nature have not been approved by the War Production Board.

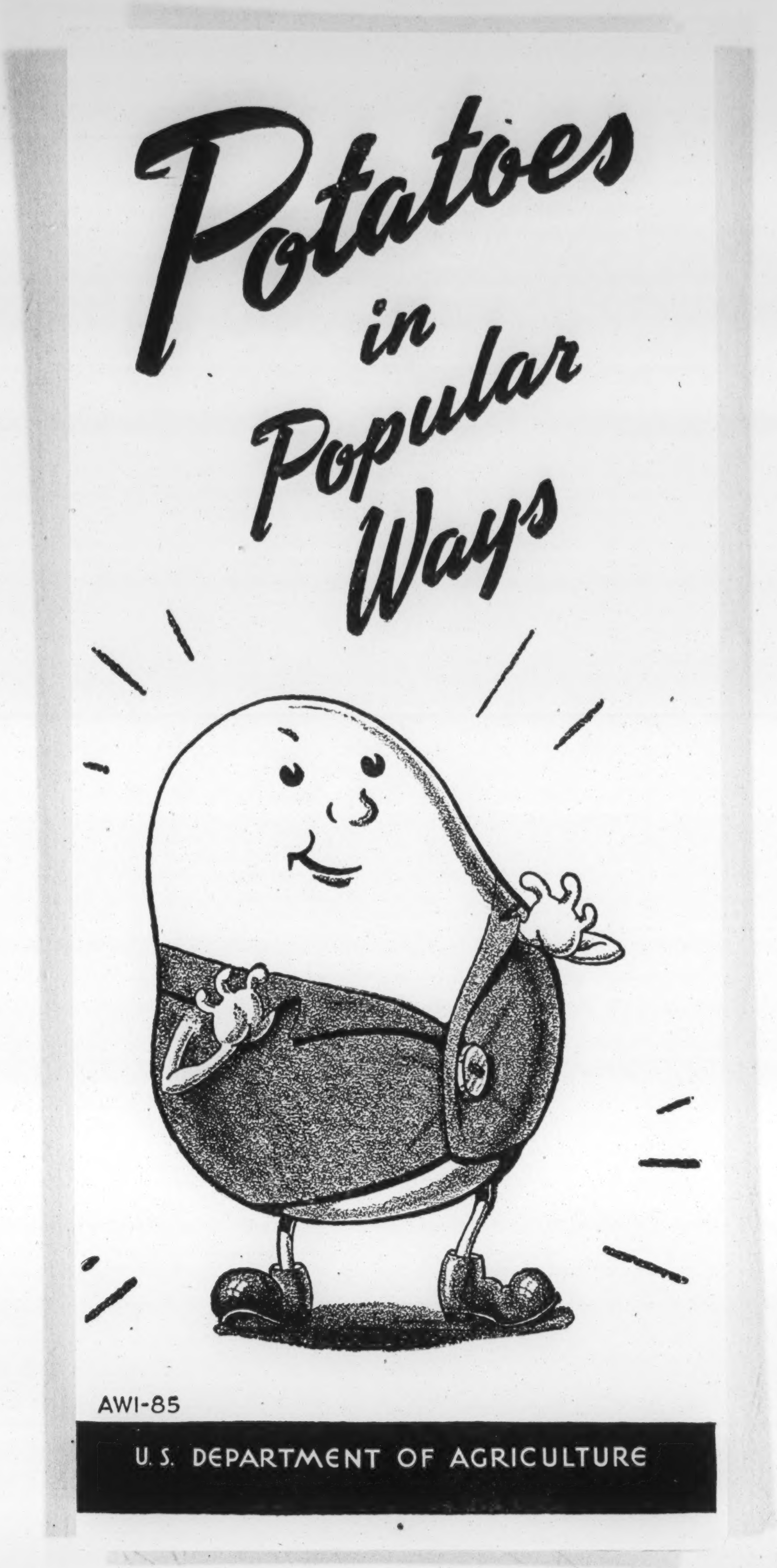
"In order to emphasize the importance of this activity, additional instructions are being issued to our entire organization to approve such essential 'in-plant' facilities in war plants as cafeterias, rest rooms, toilets, and locker facilities when they are submitted by the War Department, Navy Department, or Maritime Commission.

"Sincerely yours,

"Donald M. Nelson
Chairman"

Erickson
Ziegler
Valentine
Webb
Wolfe

Anderson - J
Lowrie
Swaltz

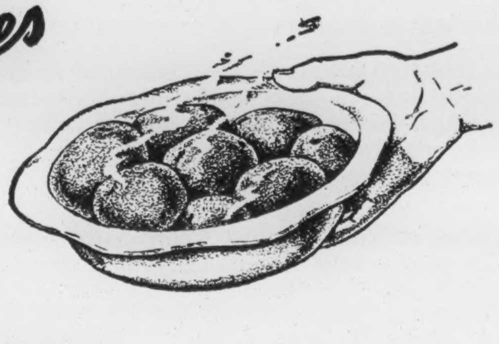


Potatoes in Popular Ways

AWI-85

U. S. DEPARTMENT OF AGRICULTURE

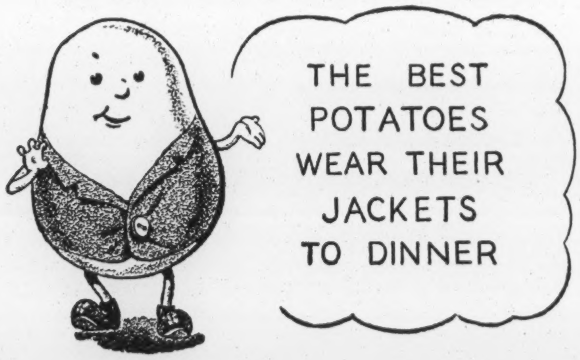
Please pass the Potatoes



Taters . . . spuds . . . murphies . . . Irish—call them what you will—potatoes belong on your priority list of foods for year-round eating.

And Here's Why

- Potatoes pack good food values under their brown jackets. When you eat them daily, you can get as much as one-fourth of your vitamin C quota, besides some of the B vitamins, iron and other important minerals, and starch.
- Potatoes are a cheap energy food. Penny for penny, they have more energy-giving value than any other vegetable.
- Potatoes fit into any meal. You may serve them at breakfast, dinner, or supper.
- And potatoes need not be fattening. One medium-sized potato has about 100 calories—no more than an apple or banana, and only half the calories of a medium-sized piece of pie or a hamburger and roll. If you're watching weight, watch what you put on the potatoes. It's the gravy, butter, or other fat that "piles up" calories. And it's the total of all the foods you eat that adds the pounds.


THE BEST POTATOES WEAR THEIR JACKETS TO DINNER

Potato Tips

Best potatoes are firm and clean, have shallow eyes, and no cuts, decay, or green spots.

For good mashed or baked potatoes, use a mealy, flaky variety of potato; for salads, creaming, and the like, use firm, waxy kinds that hold their shape.

Get the Good From Potatoes

- Best way to get most food value from potatoes is to cook them in their jackets.
- And of the two ways of cooking potatoes in jackets, boiling conserves more vitamins than baking.
- So—start with potatoes "boiled in their jackets" whether you're serving them parslied, mashed, creamed, hash-browned, or in salad.
- When raw potatoes are called for, as in scallop or soup . . . keep the peelings thin.
- Peel potatoes just before you cook them . . . don't let them soak. If you must peel them ahead of time, put them in salted water.
- Best way to serve all potatoes is quick-cooked and steaming hot, for the longer they stand exposed to the air, the more vitamin C they lose.
- But if you have left-overs, save them to start a good dish for another meal. And be sure to keep them covered and in a cold place till you're ready to use them.

Recipes in this folder are for 6 servings

☆ ☆ ☆ POTATOES FOR EVERY DAY ☆ ☆ ☆

Boiled in Jackets

First of all scrub the potatoes, then drop them into a kettle of boiling water . . . enough to cover them. Cook covered until tender; drain at once so the potatoes won't get waterlogged.

Peel and season with table fat, meat drippings, or gravy, salt and pepper to taste. Or eat skins and all if they are small new potatoes.

Quick Mashed

Peel 6 medium-sized hot cooked potatoes. Mash thoroughly and quickly. Beat in hot milk a little at a time until potatoes are fluffy and smooth. Season with salt and pepper. If desired, add fat, finely chopped green pepper, pimiento, chives, or onion.

Creamed—Plain With Garnish

Peel and slice 6 medium-sized cooked potatoes. Make a white sauce by blending 3 tablespoons melted fat with 3 tablespoons flour; add 2 cups milk and 1½ teaspoons salt. Cook, stirring constantly, until mixture thickens. Add potatoes and heat.

For a "different" taste or added food value—grate a little onion or cheese into the sauce, or stir in cooked peas and carrots or chopped parsley just before serving.

For a baked dish.—Pour the creamed potatoes into a greased baking dish. Sprinkle the top with bread crumbs mixed with melted fat. Bake in a moderately hot oven (375° F.) 15 to 20 minutes or until crumbs are brown.

Potato Scallop

6 medium-sized potatoes.
2 tablespoons flour.
1½ teaspoons salt.
Pepper.
2 tablespoons fat.
2 cups hot milk.

Peel and slice the potatoes. Put a layer of potatoes in a greased baking dish. Sprinkle with part of flour, salt, and pepper. Dot with fat. Repeat until all the potatoes are used. Pour in the milk—use very fresh milk or it may curdle. Bake in a moderate oven (350° F.) for 1 hour or until the potatoes are tender and browned on top. Add more milk if the potatoes get dry.

The Perfect Baked Potato

Wash and dry potatoes of uniform size. Bake in a hot oven (425° F.) 40 to 60 minutes or until tender.

If you want the skin to be soft, rub a little fat on the potato before baking.

Cut crisscross gashes in the skin of the baked potato on one side. Then pinch the potato so that some of the soft inside pops up through the opening. Drop in meat drippings, bits of crisp-cooked salt pork, or table fat.

Save fuel by baking potatoes when you oven-cook other food. If a moderate oven is called for, allow a little extra time for the potatoes to bake.

Stuffed.—For an extra special, cut large baked potatoes in half lengthwise. Scoop out the inside. Mash; add fat and seasonings. Stir in hot milk and beat until fluffy and smooth. Stuff back into potato shells, brush top with melted fat, and brown in a hot oven.

For a main dish, add chopped left-over cooked meat or grated cheese.

Fried, Country Style

Peel, and slice thin, enough raw potatoes to make 1 quart. Put in a frying pan with 2 tablespoons of melted fat or meat drippings. Cover closely. Cook over medium heat 10 to 15 minutes or until browned on the bottom. Turn and brown on the other side. If desired, brown a little chopped onion in the fat before adding the potatoes.

Roast Potatoes

Peel medium-sized potatoes and place around meat in roasting pan during the last hour or hour and a half of cooking the meat. Turn and baste potatoes occasionally with meat drippings.

Potato Pancakes

Grate 2 cups raw potatoes and put immediately into ¼ cup milk. Add 1 egg, beaten slightly, 2 tablespoons flour, 1 teaspoon salt, pepper, and 1 tablespoon finely chopped onion. Drop from a tablespoon onto a greased frying pan. Cook until well browned and crisp on both sides. Serve hot.

HEARTY SOUPS AND SALADS

Quick Potato Soup

3 cups cubed potatoes.
2 tablespoons chopped onion.
2 tablespoons fat.
1½ cups boiling water.
4 cups milk.
1½ teaspoons salt.
Pepper.

Cook the potatoes, onion, and fat in the water until the potatoes are tender. Add the milk, salt, and pepper. Heat and serve.

Potato Soup With Oatmeal

4 cups meat stock, or use bouillon cubes.
2 cups diced potatoes.
½ cup sliced onions.
1 cup sliced carrots.
½ cup chopped celery.
½ cup rolled oats.
½ to 1 cup cooked tomatoes.
Salt and pepper.

To meat stock add potatoes, onions, carrots, and celery. Bring to boiling point. Gradually stir in the rolled oats. Simmer 20 minutes or until vegetables are tender. Add the tomatoes. Season with salt and pepper and heat.

Potato Hot Pot

3 cups sliced or diced potatoes.
1 medium-sized onion, sliced.
2 tablespoons fat.
3½ cups tomatoes.
1½ teaspoons salt.
Pepper.

Cook the potatoes and onion in the fat 10 minutes. Add the tomatoes, salt, and pepper. Cover and simmer 25 to 30 minutes, or until potatoes are tender.

For variety, add a cup of cooked green beans during the last 10 minutes of cooking, *or* add a dash of chili powder or a few sprigs of thyme, *or* sprinkle with a little grated cheese, just before serving.

Potato Salad

Hot.—Cook ¾ cup diced salt pork until crisp. Add ¼ cup vinegar, ¼ cup water, 1 medium-sized chopped onion, and 1 quart cubed cooked potatoes. Season with salt and pepper. Heat well.

Cold.—Slice or dice cold cooked potatoes. Season with salt, chopped onion, and salad dressing. If desired, add sliced hard-cooked eggs.

GIVE LEFT-OVERS A "LIFT"

Hash Browned

Add chopped cooked potatoes to a little fat in a frying pan. Season with salt and pepper. Moisten with water—about ¼ cup for 4 cups potatoes. Cook over low heat until brown on the bottom—don't stir. Serve folded in half.

Potato hash.—Add chopped cooked meat and enough gravy or hot water to moisten. Brown on both sides.

Potato Cakes

Shape cold mashed potatoes into small cakes; roll in flour. Fry golden brown in a little fat. For variety, add to the mashed potatoes chopped cooked meat or fish, or grated cheese.

Potato Crust

Line a baking dish with mashed potatoes. Fill center with vegetable stew and left-over bits of meat or fish. Cover with mashed potatoes. Bake in a hot oven (400° F.) until hot through and brown on top. If you have just a little potato, make only the upper crust.

Potato Puff

To 3 cups mashed potatoes, add 1 egg yolk, hot milk to moisten, 2 tablespoons melted fat, salt, and any other seasoning you like. Beat well. Then fold in 1 stiffly beaten egg white. Pile lightly into a greased baking dish. Bake in a moderately hot oven (375° F.) 30 minutes or until puffy and brown.

Potato Griddle Scones

2 cups sifted flour.
1 teaspoon salt.
3 teaspoons baking powder.
3 tablespoons fat.
1 cup cold mashed potatoes.
1 egg, beaten.
⅓ cup milk (about).

Sift together flour, salt, and baking powder. Cut in fat with 2 knives or a pastry blender. Blend in the potatoes. Mix egg and milk; add to first mixture. Mix slightly. Roll ⅜ inch thick and cut into squares. Bake slowly on a hot greased griddle or frying pan. Turn several times to cook through. Makes 10 to 12.

For a main dish, pour creamed left-over meat or fish or vegetables over the scones.

16—38492-1

Store Spuds Cool and Dark

- Best potatoes for storing are the late crop. But early potatoes will keep several weeks if stored properly.
- Sort before you store. Take out the decayed potatoes and set aside any bruised or cracked ones to use up first.
- Keep potatoes cool but not cold—at temperatures between 40° and 60° F., but don't let them freeze. Stored below 40°, potatoes may acquire a sweetish taste because some of the starch turns to sugar. Sometimes you can restore the flavor of such potatoes by putting them in a warmer place for a week before using.
- Keep potatoes dark . . . they like a blackout. Light gives them green spots that are harmful to eat. And although you can cut off the greenish part and eat the rest, it's wasteful. So cover your stored potatoes well with cloth or paper.
- You can eat sprouted potatoes if you peel them. But never eat the sprouts. They have the same harmful substance contained in green spots.

Issued by

BUREAU OF HUMAN NUTRITION
AND HOME ECONOMICS
Agricultural Research Administration
U. S. Department of Agriculture
Washington, D. C.
February 1944

This pamphlet supersedes the unnumbered one entitled "Potatoes in Low-Cost Meals."

For sale by Superintendent of Documents, Washington 25, D. C.
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U. S. GOVERNMENT PRINTING OFFICE 16—38492-1

NUTRITION 1945

Miss Robinson

Miss Miller and Miss Robinson June 28, 1945

Jennie Mohr Jm

War Foods Administration educational film on nutrition

I attended the showing of a brief film prepared by Disney on nutrition. It was exhibited at the Department of Agriculture auditorium on June 26th.

There were short talks before the showing by Dr. Stiebling of the Human Nutrition and Home Economics Division, Department of Agriculture, Dr. Mountin of Public Health, Dr. Dietrick of the Children's Bureau, and a member of the Office of Education whose name I do not know. They described the functions of their respective bureaus in the field of nutrition. Mr. Maury Hanson, of O.W.I., described the making and use of the film.

The film was an excellent presentation of the elements of nutrition. I was impressed, as I was with the earlier showing of health education films for the Latin-American countries, with the excellent way in which the cartoon technique is used for educational purposes. The film is to be shown shortly in regular movie picture theaters. Starting September special showings are planned for schools and colleges.

JM/ml

MONTHLY

INDUSTRIAL NUTRITION SERVICE

For employee publications, and individuals and groups promoting nutrition education

U. S. DEPARTMENT OF AGRICULTURE
Production and Marketing Administration
150 Broadway, New York 7, N. Y.

December, 1945

No. 14

To House Organ Editors: These articles may be included in your plant publication. Select those which will interest your readers.

FOOD NEWS

Foods of the month

Poultry will be plentiful in December. Civilians who got scarcely a whiff of the traditional Christmas turkey last year will find turkeys in the markets throughout the month. Roasting chickens also will be plentiful. Cabbage, carrots, and white potatoes will continue to be abundant throughout the country. Fresh topped beets will be found in the markets in the Midwest and Northeast.

Good news for workers

Many industrial plants will take advantage of the plentiful supply of tom turkeys. Turkey plates and hot turkey sandwiches will be served in plant cafeterias. Remember that turkey and chicken are good buys in food value as well as in satisfaction. Protein, iron, and the B vitamins are found in poultry, and more niacin than in most other meats.

Beets for color and food value

The red, red beet is one of the most colorful vegetables. It contributes minerals, especially iron, to the diet, as well as plenty of eye appeal to the meal. As beets are usually cooked in their skins, there is little loss of minerals during the cooking.

TAKE HOME IDEAS

Turkey talk

Get a large tom turkey if the family is gathering together for Christmas. There'll be plenty of delicious hot turkey for the big dinner, and there'll be cold turkey for another meal. If your family is small, you may be able to purchase a half-turkey--available in some cities. It should be roasted just like a whole bird.

If stuffed turkey or roast chicken is the order of the day, the following suggestions for preparation and roasting the birds are worth noting:

Selection -
1. Select a young, well-fatted bird for roasting.
2. Allow for each person to be served:
   - 3/4 to 1 pound (dressed weight) of turkey.
   - 1 pound (dressed weight) of chicken.

Preparation -
3. Clean the bird well. Pull out the pinfeathers, and singe the bird to remove the hairs.
4. Rinse the bird thoroughly inside and out. The skin may be rubbed with a little corn meal to cleanse it.

Stuffing and Trussing -
5. Before stuffing, rub the inside of the bird with salt.
6. Fill the body cavity with stuffing. Allow about 4 cups of bread crumbs for a 5-pound roasting chicken (dressed weight), and 12 cups (3 quarts) for a 14-pound turkey (dressed weight.) Be sure to allow room for the stuffing to expand during roasting.
7. Tie the legs and wings close to the bird, and fold the neck skin toward the back and fasten. 1/
8. Rub the outside of the bird with fat.

Roasting -
9. Place the bird breast down in a shallow uncovered pan with a rack. Turn the bird from one side of the breast to the other, as it roasts, to insure even cooking.
10. Roast the bird at a constant temperature of about 300° F. until the flesh is tender.
11. Allow about 30 minutes of roasting time per pound for chickens weighing 4 to 5 pounds.
12. Allow about 20 minutes of roasting time for medium-weight turkeys, and 15 to 18 minutes per pound for heavy turkeys.

Cooking Beets at Home

Beets are one of the most colorful vegetables when they are prepared properly. To retain the bright red color and fine flavor of fresh beets, prepare them as follows:
1. Wash the beets thoroughly, leaving on the rootlets and about 2 inches of the stems.
2. Start cooking the beets in enough boiling water to cover. Cook the beets until tender in a covered container.
3. Drain the beets and cover them with cold water to loosen the skins.
4. Slip off the skins, rootlets, and stems.
5. Slice or dice the peeled beets and season them with butter, fortified margarine or meat drippings, and salt and pepper to taste.
6. Vary the flavor occasionally by serving the beets with vinegar or lemon with a "Harvard" sauce.

Shredded beets and sliced pickled beets are good in salads. Keep the beets in a separate mound as they will color other salad materials.

1/ For full directions for trussing and roasting poultry see "Poultry Cooking," Farmers' Bulletin No. 1888, U. S. Department of Agriculture. Available from the Superintendent of Documents, Washington 25, D. C. Price 10¢ per copy.

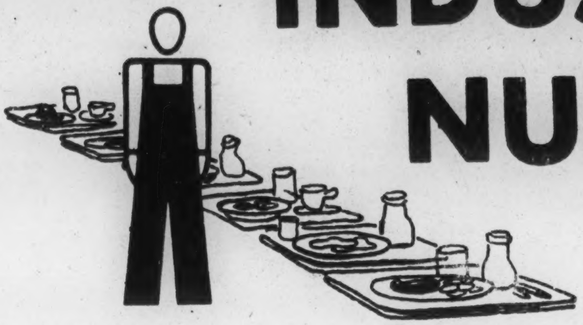
HEALTH NOTES

If you were a regular blood donor during the war you should be careful to keep the supply of material for red blood cells ahead of your body demands. To do this you should get a good supply of iron and protein in your food.

Meats, eggs, and leafy green vegetables are excellent sources of iron. Potatoes and beets contain considerable amounts. Whole-grain cereal and enriched bread will also add iron to your diet. Eat a good healthful breakfast, an egg a day, and a protein-rich dish for lunch and dinner every day.

MONTHLY

INDUSTRIAL NUTRITION SERVICE



For employee publications, and individuals
and groups promoting nutrition education

UNITED STATES DEPARTMENT OF AGRICULTURE
Production and Marketing Administration
150 Broadway, New York 7, N. Y.

November, 1945 No. 13

To House Organ Editors

These articles may be included in your plant publication. Select those which will interest your readers.

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FOOD NEWS

Plant cafeterias the country over will be featuring carrots, cabbages, white potatoes, and sweetpotatoes in November. These old-time favorites are the foods of the month. Workers in plants in the Northeast, South, and Central West will find cauliflower offered frequently in many delicious ways.

Carrots are tops

The story of the carrot's climb to the lofty position science gives it today is a typical American success story. When carrots were first introduced into this country, they were considered weeds. The Dutch were the first to cultivate them, and they introduced them into England during the reign of Queen Elizabeth. English ladies were said to use carrot tops as plumes on their favorite hats.

Carrots are high in vitamin A, and they contain other vitamins and minerals in smaller amounts. It's vitamin A that helps to maintain healthy skin and membranes and helps us resist infections. Vitamin A is also essential for good vision and a liberal supply in the diet improves night vision and prevents "night blindness." Carrots are one of our best sources of vitamin A, so no wonder the scientists sing its praise.

Choose carrots often when you find them on the cafeteria counter. Eat them cooked or raw for the vitamins and minerals they contribute to your daily diet. Use them liberally at home, too.

Eat a lunch that packs a punch

A well-balanced lunch is body fuel, necessary to carry us through a full day. If we wish to avoid that over-tired felling when our working day is done, we'll choose a good lunch. Whether you eat in the plant cafeteria or bring your lunch from home you can get the vital body fuel you need if your lunch is well-balanced. Remember, a good lunch should supply about 1,000 calories and one-third or more of the daily food needs.

A well-balanced box lunch

The family lunch packer will include, for health's sake, the following foods in the lunch box every day:

1. Protein-rich food (meat, fish, poultry, cheese, eggs or peanut butter).
2. Enriched or whole-grain bread. Vary the bread from day to day. Use oatmeal, raisin, graham, and fruit breads occasionally to add interest.
3. Butter or fortified margarine. Spread it clear to the edge of the bread to keep the filling from soaking into the bread.
4. Milk. As a beverage or in the form of custard, or a pudding, or cream soup.
5. A green or yellow vegetable. Lettuce, celery curls, raw carrots and yellow turnip sticks add crispness and vitamins.
6. Fruit or fruit dessert. Apples, oranges, bananas, and dried fruit are easy to pack. Include a stewed or canned fruit in a covered jar now and then.

For morale include:

1. A hot food, especially in cold weather. Put a cream soup, vegetable soup, hot chocolate or perhaps chil con carne or a stew in the thermos bottle.
2. A surprise. Potato salad, raw vegetable or fruit salad, baked beans in a covered jar.
3. A sweet. Cake and cookies are good lunch box desserts - they add calories and help to "finish" the meal.

Lunch Box Menus

1.

Meat loaf sandwich on whole-wheat bread
Cream cheese and jelly sandwich on enriched bread
Crisp carrot sticks
Orange
Oatmeal cookies
Milk

2.

Cream of tomato soup
Chicken salad sandwich on enriched bread
Sliced luncheon meat on rye bread
Crisp turnip slices
Apple
Chocolate cup cake
Beverage

3.

American cheese sandwich on enriched bread
Peanut butter and bacon on whole-wheat bread
Cole slaw
Fresh grapes
Milk

4.

Corned beef sandwich on whole-wheat bread
Chopped prune and nut sandwich on enriched bread
Celery hearts
Apple sauce
Ginger cookies
Milk

5.
Tuna fish salad sandwich on enriched bun
Cream cheese sandwich on nut bread
Fresh pear
Peanut butter cookies
Milk

TAKE HOME IDEAS

Thanksgiving's coming

When selecting your Thanksgiving turkey, look for these marks of quality:

1. Clean, tender skin with few pin feathers and no bruises or discolorations.
2. Well-fleshed breast and thighs and a generally plump appearance.
3. Covering of fat under the skin on the breast, legs, thighs, and back.
4. Short body and broad breast indicate a meaty bird.

Allow about 1 pound of turkey, dressed weight, for each person to be served.

Here's a delicious Thanksgiving dinner menu which all members of the family should enjoy:

Thanksgiving Menu

Fresh fruit cocktail
Roast turkey with dressing
Cranberry sauce
Mashed potatoes* - Giblet gravy
Parsley-buttered cauliflower*
Relish tray: Carrot*sticks, celery
    curls, green olives, watermelon
    pickles

Pumpkin pie with cheese
Coffee

*Abundant foods

More about carrots

When carrots aren't good to eat it may be the fault of the cook, not the carrot. If you will make the most of the flavor, vitamins, and minerals in carrots, cook them this way:

1. Scrape young carrots lightly and cook them whole in a small amount of boiling salted water.
2. Cut large carrots into strips or slices and cook them in boiling salted water to bubble up through the carrots.
3. Cook carrots until they are tender but don't overcook them.
4. Serve the juice left in the cooking pan with the carrots or add it to the soup or gravy.
5. Season the cooked carrots with butter or margarine and serve them piping hot.

Serve them raw for color and crispness, as a relish or in salads. Make tasty raw salads combining carrots with cabbage; carrot, apple, and raisin; carrot, celery, and green pepper; carrot and pineapple molded in lemon jello. Remember, crisp carrot sticks in the lunch box are good with sandwiches or between meals.

HEALTH HINTS

Dr. Henry C. Sherman of Columbia University in New York City found that a liberal amount of vitamin A increases the life span of white rats. One group of rats fared well for 58 generations on a "good" diet, while another group, which was given the same diet but twice as much Vitamin A, lived much longer. Perhaps men, as well as rats, would enjoy a longer life and better health if they had a liberal amount of vitamin A in their diets.

If you drink a pint of milk a day, spread your bread with butter or fortified margarine, and eat one or more servings of leafy green and yellow vegetables every day, you will probably obtain the vitamin A you need for good health.

Editors please note:

You can help us make this release more interesting if you suggest food and nutrition topics which will interest your workers most. Write suggestions in the space below and mail at once to:

INDUSTRIAL NUTRITION SERVICE
Production and Marketing Administration
U. S. Department of Agriculture
Washington 25, D. C.

- -

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NATIONAL RESEARCH COUNCIL
REPRINT AND CIRCULAR SERIES
NUMBER 123 SEPTEMBER 1945

THE
NUTRITION OF INDUSTRIAL WORKERS

SECOND REPORT
OF THE
COMMITTEE ON NUTRITION OF INDUSTRIAL WORKERS
FOOD AND NUTRITION BOARD
NATIONAL RESEARCH COUNCIL

WASHINGTON, D. C.

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THE
NUTRITION OF INDUSTRIAL WORKERS

SECOND REPORT

OF THE

COMMITTEE ON NUTRITION OF INDUSTRIAL WORKERS
FOOD AND NUTRITION BOARD
NATIONAL RESEARCH COUNCIL

NATIONAL RESEARCH COUNCIL
2101 CONSTITUTION AVENUE
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INTRODUCTION

The National Nutrition Conference for Defense, held in Washington, May 26-28, 1941, recommended "that special attention be paid to the diets and nutrition of all workers in industry. . . . . The pressing importance of this problem should be drawn to the attention of the governmental agencies concerned with defense industries. . . . ." [1]

A survey of industrial feeding facilities, carried out by a member of the Milbank Memorial Fund under the auspices of the Food and Nutrition Board of the National Research Council during the summer of 1941, revealed widespread unsatisfactory dietary conditions in industry. Some of these findings were incorporated in the First Report of the Committee on Nutrition in Industry.[2] (This committee was subsequently renamed the Committee on Nutrition of Industrial Workers.)

As a result of the recommendations made in that report, together with those of the National Nutrition Conference for Defense, a section on Industrial Nutrition was organized within the Nutrition Division of the Office of Defense Health and Welfare Services in August 1942. In April 1943, the Nutrition Division was transferred to the War Food Administration. The industrial nutrition functions previously belonging to that division are now the responsibility of the Industrial Feeding Programs Division of the Production and Marketing Administration, U. S. Department of Agriculture.

The Food and Nutrition Board, through its Committee on Nutrition of Industrial Workers, has continued throughout the war period to provide authoritative opinion and quasi-official advisory service to the agencies concerned with the nutrition of industrial workers. This report is a part of the continuing program of that committee.

The objectives of the Government's industrial feeding program are "to provide the food needed by industrial workers to maintain the highest efficiency in production; to improve and expand industrial food services to provide for workers in all plants where in-plant feeding is practicable; and to provide assistance and advice to obtain the best possible use of available foods."

In carrying out this program the Department of Agriculture works closely with a number of Federal agencies. The various cooperative arrangements were formalized by the establishment in September 1943, of an Inter-Agency Committee on Food for Workers, consisting of representatives from the War Food Administration (subsequently merged with the U. S. Department of Agriculture), the Office of Price Administration, the War Production Board, the War Manpower Commission, the Federal Public Housing Authority, the Federal Works Agency, the Army, the Navy, the Maritime Commission, and the U. S. Public Health Service.

On October 4, 1943, the Inter-Agency Committee drew up a statement of "Agreement Regarding Objectives and Responsibilities." The program includes:

"(A) Nutrition education conducted on a national scale as an integral part of the War Food Program, enlisting the cooperation of all Federal agencies concerned, State and local government agencies and nutrition committees, and labor, management, professional and trade groups, at all levels. Nutrition education should be conducted in all war plants. Nutrition education and in-plant food service operations should be integrated.

"(B) The establishment of food service standards to conserve food, equipment and manpower.

"(C) Provision of rationed foods for workers on the basis of OPA ration allowances to individuals and to institutional users, unless such allowances are insufficient to meet physiological requirements because of non-availability of non-rationed foods, increased need or any other circumstance making it impractical to meet requirements through an increased consumption of non-rationed foods. In such cases, supplementary allowances should be made on an institutional basis.

"(D) Maintenance of prices of prepared foods at reasonable levels.

"(E) Provision of materials, equipment and operating supplies needed for the feeding program. This involves the full use of second-hand and installed equipment.

"(F) Adjustment of manpower requirements for food services and for production of necessary materials, equipment and operating supplies, stabilization of employment in and training of employees for restaurants and in-plant food services where necessary.

"(G) Such other steps as appear necessary."

The U. S. Department of Agriculture (Industrial Feeding Programs Division) provides technical advisory service to labor and management, to other Federal agencies, and to state and local agencies and groups. It also serves as a "clearing house" for handling requests for assistance. It screens applications for facilities and brings trouble spots to the attention of the appropriate agency. Among Federal agencies, it has the prime responsibility for nutrition education programs in industry, and it has joint responsibility with the Office of Price Administration for the solution of food supply problems.

The procurement agencies and the War Production Board have varying responsibilities for ensuring that agreed-upon recommendations actually reach the stage of implementation. Of course, the final responsibility for the success or failure of the program rests upon labor and management. When these two groups are in agreement regarding what needs to be done and desire to see something done, there are generally no insurmountable obstacles.

To determine the extent to which in-plant feeding has developed under wartime conditions, surveys of feeding facilities in plants manufacturing war supplies were conducted by the War Food Administration during October 1943, and March 1944.[3] The surveys indicated that 49 percent of these manufacturing plants had in-plant feeding facilities, but that the facilities were serving only 39 percent of the workers. The proportion of plants which had food services varied directly with plant size. For example, 91 percent of the plants employing more than 2500 workers had some type of facility, whereas food services were available in only 28 percent of plants employing less than 250 workers. The larger plants employed 55 percent of the total number of workers reported in war plants. That there is need for expansion of food service facilities is indicated by the fact that only 45 percent of the workers in the larger plants were being served mid-shift meals.

The March 1944 survey indicated that 13 percent of the plants were planning new installations or expansion of existing in-plant food services. These additional facilities could provide mid-shift meals for 1,498,800 workers.

The proportion of workers in the ship-building industry utilizing food service was less than the average for manufacturing industries as a whole, while the situation in the aircraft industry was relatively good. Although 91 percent of the large shipyards had some type of food service, only 35 percent of the workers were being served mid-shift meals. Of the large aircraft plants, 97 percent had facilities, and 68 percent of the workers were being served.

Progress has been made in the field of education. Considerable material has been prepared specifically for the in-plant feeding program, both by the Government and by private industrial organizations.

The Canadian program for nutrition in industry parallels that of the United States. The Public Health Services of Canada under the Federal Department of Pensions and National Health established a Nutrition Service in November 1941, having among its primary duties the improvement of food services in Canadian war industries. Needed authority was later given through an Order-in-Council, which also provided penalties. Informal cooperation with other government agencies controlling expense, construction, materials, and food supplies was gradually achieved. A comprehensive industrial nutrition program has been developed consisting primarily of inspections followed by directions for improvements, including educational features of many kinds.

Contact is maintained with a majority of Canadian War Industries although many small industries are still being missed. The possibility of community groups assisting in conducting a nutrition program in one or more plants is being developed.

A profitable exchange of information with the United States has been maintained through the presence on this Committee of the Director of the Nutrition Service in Canada.

Important steps have been taken during the war to protect and improve the nutritional status of the industrial worker both in this country and in Canada. However, much remains to be done. Major tasks include: (a) the development of methods to provide adequate food for the millions of industrial workers for whom in-plant feeding is not considered feasible; (b) the solution of problems arising from congestion and inadequate community and home facilities; (c) the training and employment of more qualified dietitians, nutritionists, and managers for mass feeding services and industrial plants (one of the most pressing problems existing is the shortage of such qualified personnel); (d) the adoption of satisfactory food standards by all food service operators; (e) scientifically conducted on-the-job studies on the relation of nutrition and nutritional factors to the health and productivity of the worker; (f) similar studies on the relation of nutritional status to toxic reactions in industry; (g) the development of effective techniques which can be applied by individual plants or local groups to make basic nutritional facts acceptable to the workers, and the general application of such techniques; (h) studies of the effect of food preparation and cooking practices used in mass feeding operations upon the nutritional value of the food, and practical recommendations on methods of protecting the worker from any loss of nutrients resulting from such practices.

The industrial physician should be assigned responsibility for the nutritional adequacy of the food service, as well as sanitary and bacteriological control. Acceptance by management of its share of the responsibility for the nutrition of its employees can hardly be expected unless the relationship between nutrition and health, morale, fatigue, industrial diseases, and accidents is understood by it.

In the years which have elapsed since the Committee's first report, additional data have been obtained on the extent of malnutrition among industrial workers, on the effect of malnutrition upon the quality and quantity of industrial production, and on the methods by which the nutrition of industrial workers can be improved. In the ensuing chapters, the evidence for the need for nutrition programs for workers and suggestions for their materialization are presented and discussed.

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CHAPTER I

THE "WHY" OF NUTRITION PROGRAMS FOR WORKERS

THE PREVALENCE OF DIETARY INADEQUACIES AND NUTRITIONAL DEFICIENCIES, WITH PARTICULAR REFERENCE TO INDUSTRIAL WORKERS

Since the first report of this Committee was published (April 1942)[2] more facts on the diets and nutritional status of industrial workers have been made available. A survey[4] by the Illinois State Health Department of 1102 luncheon trays in the cafeterias of four Chicago war plants revealed that only 8 percent of the workers chose adequate foods, 21 percent chose foods that were borderline in respect to adequacy, and 71 percent purchased totally inadequate meals.* Another interesting survey[4] of the food selected in a 24 hour period by 1020 workers was made by a nutritionist for a large industrial research foundation. It was pointed out that 28 percent of the workers had no milk with any meals, 22 percent had no fruit, 44 percent no eggs, 77 percent no cereals, and 22 percent no green vegetables. It has been reported that a number of war workers (10 percent) in the San Francisco area often arrived at their work without breakfast.[5] Of the breakfasts chosen, 64 percent were rated as poor, and only 14 percent as good.†

An appraisal of the contents of 704 lunch trays in one plant disclosed the following:[6]

	Good ‡	Fair ‡	Poor ‡
704 people	54 7.7%	219 31.1%	431 61.2%
467 men	43 9.2%	170 36.4%	254 54.4%
237 women	11 4.6%	49 20.7%	177 74.7%

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* The meals served were scored according to the presence or absence of the following food stuffs: 8 oz. glass of milk or two foods made from milk, each equivalent to one-half cup of milk; three-fourths cup of green or yellow vegetables; one medium or two small potatoes; one serving of meat, cheese, fish, or eggs; two slices of whole-grain or enriched bread; one square of butter or fortified oleomargarine; and one of the following groups of foodstuffs: 4½ oz. of tomato juice, 4½ oz. of grapefruit juice or ½ grapefruit, one orange, 4½ to 5 oz. of raw cabbage or green pepper or a mixture of the two. If all of the food items were selected the luncheon was considered adequate. If one of the items was omitted, it was judged fair, and if more than one of the items were omitted the luncheon was judged poor or inadequate.

† The breakfasts were rated as good if the combination of foods included two of the following items: fruit, milk, cereal, ham or egg, and an additional food to supply 500 calories. A breakfast which had none of the above foods or supplied less than 300 calories was rated as poor and those who had no breakfast at all were rated in the "poor" class.

‡ The standards for the ratings were as follows:

"Good": Two-thirds or more of the Recommended Allowances for one meal, *i. e.*, If a fresh vegetable salad had been added to the meals of those who did not purchase one, the results would have been as follows:

	Good	Fair	Poor
704 people	141	407	156
	20%	57.8%	22.2%

The meals of the men tended to be better than those of the women, mainly because the men ate more.

While no detailed nutritional studies of industrial workers have been undertaken in Canada, a dietary study [7] carried out early in the war on families with less than $1,500 per year income revealed that their food consumption was not satisfactory. It has been estimated that one-half of all Canadian families fall within this income group. More recently many surveys have been made of lunches and breakfasts eaten by workers in Canadian industries. The general results are illustrated by a lunch survey which showed that, out of 828 carried lunches, only 19 percent could be graded as good, while out of 1029 bought lunches 43 percent could be graded as good.* More than half of the people in each case had no milk to drink at this meal.

Apparently, good lunches are eaten by a greater proportion of workers patronizing cafeterias than of workers bringing packed lunches from home.

Perhaps the most accurate data on workers' diets were furnished by a study of the diets of about 1100 aircraft workers in Southern California.[8] The weekly consumption records of selected foods indicated that over fifty-five percent of the diets were poor as regards green or yellow vegetables; nearly fifty percent were deficient in citrus fruits or tomatoes; thirty-three percent were poor in milk; and about twenty percent low in eggs. Practically all the workers consumed sufficient lean meat. Only 2 percent of the men had diets which met or approximated the Recommended Dietary Allowances of the Food and Nutrition Board, National Research Council; [9] 11 percent obtained marginal diets, while 87 percent had diets which were decidedly unsatisfactory in one or more of the food groups.

Young men had somewhat better diets than older men. Men under 25 years of age drank more milk and ate more citrus fruits than those 25 years or older, but they all consumed about the same inadequate amount of green and yellow vegetables and of eggs.

An analysis of 250 two-day diet records indicated that 46 percent of the diets contained less than two-thirds of the recommended daily allowance for ascorbic acid. The percentage of diets that contained less than two-thirds of the recommended allowance for riboflavin was 43 percent; for calcium,

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⅓ of the Recommended Allowances for a day.[7] A meal in which only one of the nutritive essentials was lower than two-thirds of the Recommended Allowance was classed as "good."

"Fair": Two or three nutritive essentials less than two-thirds of the Recommended Allowance for one meal.

"Poor": More than three nutritive essentials less than two-thirds of the Recommended Allowance for one meal.

* A lunch was rated good if it contained (a) a sandwich or plate lunch containing a protein food such as meat, fish, eggs, cheese, or beans, (b) a vegetable, other than potatoes, or a fruit, (c) milk, preferably as a beverage.

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25 percent; vitamin A, 15 percent; thiamine, 14 percent; niacin, 7 percent; iron, 4 percent; protein, 1 percent. Of interest is the fact that nearly one-third of the men had a seemingly insufficient caloric intake. Obviously many workers are not adequately fed as judged by modern standards.

The same aircraft workers were given medical and laboratory examinations in order to determine their nutritional status.[10] Their weight, according to height and age, was normal. Serum protein concentration was also normal. Nearly every subject showed either gross or biomicroscopic thickening, opacity, or localized elevation of the conjunctiva, lesions which are considered by some to be due to vitamin A deficiency.[9]

About 17 percent showed one or more abnormal neurological signs, such as absence of knee and/or ankle jerks, calf muscle tenderness, plantar dysesthesia, loss of vibratory sensation in toes to a C-128 tuning fork, signs which may be indicative of thiamine deficiency. It was observed that about 26 percent of the subjects had loss of vibratory sensation in toes to a C-256 tuning fork. This is generally accepted as pathological in men under 35.

Signs associated with riboflavin deficiency were found among these workers. Nine percent showed cracks or fissures at the sides of the mouth and scaly, greasy desquamation at the angles of nose and eyes. Twenty-three to forty-three percent showed ocular manifestations suggestive but not pathognomonic of riboflavin deficiency, such as lachrymation caused by light; eye fatigue or eyestrain; burning, itchy, or gritty feeling in the eyes; sensitivity to bright light. Nearly every subject showed some degree of corneal vascularity. However, it is questionable whether this can be interpreted as evidence of riboflavin deficiency.

As was to be expected from the dietary studies, niacin deficiency was reported in only 2 percent of the subjects.

On the other hand, in view of the low intake of citrus fruits or tomatoes, it is not surprising that 32 percent of the men had plasma ascorbic acid concentrations below 0.4 mg. per 100 ml., and another 20 percent below 0.6 mg. per 100 ml., indicating a low vitamin C content in their tissues. Eleven percent had hemoglobin values below normal.

A greater consumption of milk, citrus fruits or tomatoes, and certain green vegetables would correct the major dietary deficiencies of riboflavin, ascorbic acid, and calcium and raise the intake of most other nutrients.

A rigorously controlled large-scale experiment on the effect of a "vitamin-mineral" supplement on their industrial efficiency was carried out on these aircraft workers.[11] The study ran for a year from March 1, 1942, to February 28, 1943, during which time the men received a "vitamin-mineral" supplement in capsules and pills twice a day while they were at work, five days a week. The supplement contained:

Vitamin A	50,000 I. U.
Vitamin D	800 I. U.
Vitamin B_1	10 Mg.
Vitamin B_2	10 Mg.
Niacinamide	100 Mg.
Vitamin C	250 Mg.
Calcium (as Carbonate)	500 Mg.

A conservative estimate of the over-all gain to production from the physiological effect of the "vitamin-mineral" supplement, after all psychological effects were eliminated, is 10.5 working days per man per year. This corresponds to a gain in manpower of 4.1 percent.

Of this total gain of 4.1 percent, 62.9 percent was due to better general work performance, reduced absenteeism contributed 21.6 percent, and reduced turnover 15.5 percent.

The percentage reduction in absenteeism as compared with that in the control group was 18.6 percent, in turnover 26.9 percent, and improvement in general work performance 2.6 percent. Although the last figure (expressed as a percent) is the smallest, the actual gain from improved work performance is greatest, as the percentage figure refers to all the workers, whereas in the case of absenteeism and turnover only a fraction of the total number of workers is involved.

The estimates of the results obtained are based on performance data and not on subjective reports of the subjects. The data are consistent in showing a physiological benefit from the "vitamin-mineral" supplement not ascribable to any psychological influence. The physiological and psychological effects were additive.

Definite evidence of a psychological effect was one of the interesting findings of the study. This effect may be attributed to the fact that the subjects volunteered for the test and knew that they were participating in a health study. By the use of appropriate controls it was possible to separate the psychological from the physiological effects. The psychological effect influenced only absenteeism. General work performance and the rate of turnover were not affected by it. It alone reduced absenteeism by 29.3 percent; the physiological effect caused an additional reduction of 18.6 percent in the entire group receiving the "vitamin-mineral" supplement, and from 11.7 to 35.5 percent in different sub-groups.

The psychological effect appeared very early in the study and diminished as the study year progressed, whereas the physiological effect built up slowly, was not manifest until four to six months, and then persisted until the end of the study year.

That nutritional deficiencies are prevalent among the people of the United States is strikingly brought out in the report of the Committee on Diagnosis and Pathology of Nutritional Deficiencies of the Food and Nutrition Board, National Research Council.[12] The report points out that most of the deficiency states are of the mild, moderate or severe chronic form, and because of their gradual development are frequently unsuspected.

These studies emphasize that a large number of industrial workers have multiple but mild nutritional deficiencies.

CAUSES OF MALNUTRITION AMONG WORKERS

Malnutrition exists in the working population chiefly because of inadequate income, poor food habits, unavailability of proper foods, physiological stress, which increases food requirements, and metabolic disorders and diseases that interfere with the digestion and absorption of foods.

1. Inadequate income

In a study conducted during 1935-36[13] it was calculated that good nutrition generally could not be expected with a weekly food expenditure below $2 per capita, and was not probable with less than approximately $4. The food budget necessary for the average American family (3.8 persons) in 1935 was thus $395 to $790 yearly. If it is estimated that the food budget is one-third of the total budget, it appears that a family income of at least $1200 was necessary on the average in 1935-6 before a family could purchase sufficient of the proper foods.

2. Poor food habits

Ignorance. Foods vary considerably in nutrient quality. Some foods that cost little may be nutritionally expensive and foods generally considered expensive may be nutritionally economical. A knowledge of foods that combine to give good nutrition at the lowest cost is necessary if a worker and his family are to be properly fed on a limited budget. Just as illiteracy in this country has been greatly reduced by universal interest in and support of education, so malnutrition can be significantly reduced by mass activities to educate the people to select the proper foods.

Indifference. Many workers have the money and enough knowledge to enable them to buy a good dietary and still fail to be well nourished because of their indifference. It is indifference that prompts a worker to rush through a breakfast of doughnuts and coffee when he knows that a leisurely meal of fruit, cereal, eggs and enriched bread is what he needs; indifference that allows a young woman to lunch on a soft drink and candy when she knows that milk and a nutritious sandwich would be beneficial; indifference that permits a housewife to serve the workers in her family an overcooked, drab dinner when she knows that overcooking impairs food values and that a selection of a variety of attractive, nutritious vegetables, fruits, and meats, fish or eggs is required.

Improper selection and preparation of foods. Good nutrition consists of consuming all essential nutrients in amounts adequate to promote the best growth, development, and maintenance of the body. If the intake of any nutrient is habitually insufficient, the functioning of several organs may be impaired. If one nutrient is not adequate, this may also interfere with the functioning of other nutrients in the body. The selection of a nutritionally balanced dietary is thus of great importance. Nutritional status has an important bearing upon resistance to disease. For example, a direct correlation between the dietary intake and body stores of protein and antibody formation has been demonstrated in the experimental animal and there exists presumptive evidence of a like relationship between protein nutrition and acquired immunity in man.[14]

During recent years it has been shown repeatedly that the nutritional value of food declines during transit from the farm, storage at the market, and preparation in the kitchen. During the canning, processing, and refining of foods, and even while standing on the pantry shelf, food values are lost. One can get better nutrition by using whole grain or enriched staple foods, by choosing vegetables that are fresh or properly canned, by using a minimum of water in cooking, by consuming the pot liquor of vegetables in a soup or gravy, by cooking rapidly, and by consuming foods soon after cooking.

The nutritive values of foods served in cafeterias are generally lower than those of home-prepared foods mainly because cafeteria foods are frequently cooked longer and stand longer after cooking. Goodhart[15] has calculated that between 36 percent and 92 percent of the thiamine content and between 30 percent and 82 percent of the ascorbic acid content of luncheons were lost during preparation and service in the cafeteria of a large war plant. Nagel and Harris[16] measured losses as high as 95 percent in the ascorbic acid and thiamine content of vegetables during cooking and service in a cafeteria. The average losses of ascorbic acid were 45 percent during cooking and another 30 percent on the steam table, while the losses in thiamine averaged 35 percent during cooking and another 35 percent on the steam table. In another large industrial cafeteria, the losses in vitamins in vegetables under actual operating conditions ranged as follows: thiamine 16-64 percent, niacin 2-61 percent, riboflavin 22-45 percent, and ascorbic acid 27-90 percent[17]. A number of investigators have found losses of nutrients from foods varying with methods of preparation, cooking, and service.[18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28]

It is evident that the losses of nutrients from foods cooked in large quantities in the customary manner may be very high. Some losses can be avoided by eating certain foods raw; some can be minimized by reducing the cooking time and by serving promptly. Some losses cannot be avoided.

3. Availability of food

A shortage of labor, container materials, and transport affects the distribution of foods and influences civilian consumption. Fortunately nutritive essentials can be supplied by so wide a variety of foods that, in most instances, other foods can be used as alternates for those that are scarce.

The diets of many workers suffer because of the non-availability of proper eating places in or adjacent to the workers' places of employment.

4. Physiological stress and metabolic disorders

Even when the dietary is adequate, it is possible for malnutrition to develop. This "conditioned malnutrition"[29] is the result of interference with the ingestion, absorption, or utilization of the nutrients of food, or is caused by factors that increase the requirement, destruction, or excretion of these nutrients. Disorders of the gastro-intestinal tract and of the nervous system, allergy to food, loss of teeth, pregnancy, and therapy may each interfere with ingestion. Strenuous physical exertion, hot environment, fever, pregnancy, lactation, and certain therapies may increase the nutritive requirements. Gastro-intestinal disease, biliary disease, vitamin deficiency, and therapy may interfere with absorption. Liver dysfunction, hypothyroidism, malignant growths, and special therapy may interfere

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with utilization. Diabetes, lactation, excessive perspiration, and therapy may increase excretion. Gastro-intestinal conditions, poisoning, and special therapies may increase destructions of these nutrients.

Thus heavy work, exposure to toxic substances, disease, and the treatment of disease may increase the requirement for some nutrients to an extent where even a good diet may not be sufficient to prevent the development of mild, or even severe, nutritional deficiency disease.

CHAPTER II

APPRAISAL OF THE NEED FOR A NUTRITION PROGRAM, AND OF ITS EFFECTS, IN AN INDUSTRIAL PLANT

THE VALUE OF DIETARY SURVEYS

Dietary surveys in industrial plants can be useful in ascertaining the need for remedial measures such as in-plant feeding installations and educational programs. The dietary situation may vary within an area according to the nature of the employee population and the size, location, and type of work of specific plants.

An adequately publicized dietary survey is a very effective method for stimulating the interest of industrial workers and management in dietary problems and in nutrition in general. Many people are unaware of what they have been eating until the facts are set down on paper before them. By actively participating in the survey they become interested in their food habits.

Through a dietary survey, a reliable picture of a prevailing food pattern or patterns can be obtained, providing the basic information for a nutrition educational program and for the improvement of in-plant feeding facilities. For example, dietary surveys in plants in different parts of the country have shown the frequency of poor breakfasts, thereby demonstrating the need for providing adequate breakfasts in plant cafeterias. Another survey showed that the caloric intake of 20 percent of the workers in one plant was habitually less than 2,000 calories daily. In one plant in Southern California a survey revealed that 40 percent of a group of adequately paid, intelligent young men ate no citrus fruit or tomatoes. In another factory, the dish most frequently bought in the cafeteria was chili beans; very few of the workers bought vegetables, which were badly overcooked. Inquiry revealed that vegetables would not have been bought in significant amounts even if they had been properly cooked. The chief reason for the failure to choose vegetables lay in the poor dietary habits of the workers, which an educational program would strive to change.

In one institution, a short dietary survey revealed that there was an over-consumption of meat; in another, the consumption of milk was far above the optimum amounts recommended by nutritionists. The changes made, following the surveys which required only a few days, saved these institutions between $30,000 and $40,000 annually and contributed substantially toward intelligent conservation of foods in short supply in the community.

DIETARY SURVEY METHODS

Care must be taken to minimize the amount of work and personnel used in dietary surveys, as in all other activities only indirectly associated with production. The following methods provide useful information, and require a minimum of time and manpower.

The quantities of the different kinds of food served can be obtained from the records of the in-plant feeding establishment. These, divided by the number of meals served or workers fed, give not only an over-all picture of dietary patterns, but also many details. Similar information can be obtained from canteens and other auxiliary eating facilities.

Information thus obtained should be supplemented by studies of the contents of trays. These can be made conveniently by a person located at the cash register and provided with a tally sheet.

By going through a plant at meal time one can learn quickly the composition of lunches brought from home.

Surveys of the dietary pattern in a given plant should include the following additional data: the percentage of workers who use in-plant feeding facilities; the availability and type of food-service facilities in the plant; and the percentage of workers who obtain box or other lunches from commercial sources operating near the plant. The composition of such lunches should be checked. This information can usually be obtained from the vendor, but it should be verified by direct observation.

It is highly desirable to have the daily meal pattern. The patterns of not less than two and preferably five working days should be obtained. The practical method of getting this information is by direct interview. Experience has shown that it is unsatisfactory to ask a worker to fill out a questionnaire himself. If the questionnaires are sent out the return is usually both poor and unreliable.

The interviewer who fills out the questionnaire should be trained, and should have the assistance of food models to refresh the memory of the person interviewed regarding sizes of portions eaten. Interviews, to be well done, require at least fifteen minutes and need not take much longer. If an appointment is made several days in advance and the worker is asked to record the food he eats during the intervening days, the record will be more accurate and the time required for the interview will be shorter.

Below are two forms which have been used extensively in dietary survey interviews. The first form is used to record in detail the kinds and amounts of food eaten during the two days immediately preceding the interview. (Few people can remember all that they have eaten farther back than two days.) The other form gives the dietary pattern for a week. Only the kinds of food eaten are to be recorded on this form (except in the case of milk and citrus fruits). When filling it out, it is good practice to ask about all the breakfasts first, then the luncheons, and then the dinners; while breakfast will be nearly the same every day, the other meals will vary.

SURVEYS AND STUDIES OF NUTRITIONAL STATUS OF THE WORKERS

With the exception of a few regions where severe and acute deficiencies of the B-complex vitamins are endemic, the incidence of acute, severe nutritional disease in this country is low. Every physician, industrial or otherwise, should be competent to diagnose and treat severe and/or acute nutritional deficiency diseases. Persons manifesting them should be de-

DETAILED DIETARY RECORD FOR TWO DAYS

Name.. Survey No....................................

Date.. Recorder:....................................

DIET RECORD FOR: YESTERDAY.......................... DAY BEFORE YESTERDAY.........................

Breakfast: Hour................
Eaten at "home".............. "Out"..................

FOODS EATEN:	AMOUNT:

Meal at work (or Mid-meal*) Hour............
Carry lunch........... Buy extras†..................
Buy all....................

FOODS EATEN:	AMOUNT:

Other Meal: Hour............
Eaten at "home"................ Bought "out"....

FOODS EATEN:	AMOUNT:

Food and Drinks between meals:................
At the plant:................ Amount:..................

FOODS EATEN:	AMOUNT:

At other times:

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* Mid-meal for Sundays and other days not at work.

† Enter "B" before specific food items bought to supplement lunch box. Describe here any special eating situation.

WEEKLY DIETARY PATTERN

Name:.. Survey No........................
Date:.. Recorder:........................

FOOD HABITS AND LIVING CONDITIONS

Did you have citrus fruit today?.............. Kind and amount.................. Hour..............
Are the 2 days reported typical of your diet?..........................
Are they *usual* as to *amount* of food eaten?..........................
Do you take any "tonic" or vitamins other than those given by the study?..................
If so, what do you take?..

FOODS EATEN IN 5 DAYS PRECEDING 2-DAY PERIOD*

Milk (glasses)					
Eggs—number					
"Dark" bread—kind					
Breakfast cereal—kind					
Potatoes—specify sweet					
Vegetables					
Vegetables					
Salads—content					
Citrus fruit—amount juice					
Other fruits—raw or cooked					
Liver, kidney, tongue, heart					
Meat, fish, fowl					
Cheese—in sandwich or piece					

Married: Wife (or family) with you......................Have hskpg. quarters..........................
Room(s) only, no kitchen............Eat at boarding house............Live there.................
Eat at restaurants........................Remarks:

Single: Live with relatives............Usually eat with them............Rent room.......................
Eat same place............Board different place............Eat at restaurants.......................
How far from work do you live?........................Time to get there................................
Usual hours of sleep........................

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* Type only, except where indicated.

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tected in the pre-employment and periodic medical examination. The problem of acute, severe nutritional disease is too infrequent and concerns too few cases to warrant special studies or even routine surveys in most industrial plants in this country.

On the other hand there is evidence that mild, chronic nutritional deficiency is widespread in this country and is found in all economic classes and occupational groups. Some students of the subject dissent from this view. Further study of the diagnosis of mild, nutritional deficiency states is required.

At the present time, the industrial physician need not be concerned with procedures such as biomicroscopic and dark adaptation examinations and the determination of vitamin levels in body fluids in routine pre-placement examinations. Pre-placement and periodic medical examinations should include appraisal of neurological status and the condition of the tongue, gums, teeth, and skin, in addition to the measurement of height, weight, and hemoglobin. This is not beyond the capacity of an efficient medical department.

Medical case histories yield useful information, if a dietary history is included. Dietary defects, especially if they are of long duration, may account for symptoms otherwise inexplicable. In this category are undue general fatigue, or fatigue of the eyes, a feeling of strain, and vague, but persistent, gastro-intestinal symptoms. Lassitude, apathy, a chronic state of "not feeling up to the mark" are common early signs in many chronic diseases, including nutritional deficiency states, although they are, of course, not pathognomonic of any one.

Studies on the Effect of Nutritional Supplements

In planning a study of the effect of nutritional supplements or improved meals on nutritional status or on work performance the following are some of the basic considerations:

1) The study should be carried on for not less than one year and preferably for two years or more.
2) It must be rigorously controlled; there should be three groups: one group receiving the supplement (or improved meal), one control group receiving a placebo (or a meal as attractive as the improved one but unimproved in nutritional value), and a non-participating control group statistically comparable to the first two. The second control group is necessary to appraise the psycho-therapeutic effects of participation in a study *per se*. The psycho-therapeutic effects are real and of considerable magnitude.
3) The number of subjects at the beginning of the study should be so large that there will be not less than two hundred in each of the three groups at the end of the study. (It can be expected that, in any study of long duration, about one-half of the initial group will drop out before the completion of the study.) The difference between the three groups are apt to be small, and unless there are at least two hundred subjects in each group the differences observed are likely to be of low statistical significance.

Recently, there have been a number of studies in industrial plants of the effects of a vitamin supplement. In few of these has it been possible to be sure that all of the subjects took the supplement every day. Experience has shown that when direct supervision is not provided, the subject often does not take the supplement regularly.

In some studies, the questionnaire method was the only one used to determine the experimental results. Answers to questionnaires appraise subjective changes and are of value only when large, well-controlled groups are compared. However, improvement in the state of well-being is important and is often unjustifiably minimized in studies where only objective clinical and laboratory methods are used.

The results of dietary surveys in industrial plants and studies of the nutritional status of industrial workers should be directed toward formulating an intelligent remedial program, which should include educational procedures. Experience during the last few years has shown that, even where there are adequate in-plant feeding facilities, an effective educational program is necessary if the workers are to obtain maximum benefit.

CHAPTER III

SOME IMPORTANT CONSIDERATIONS IN THE DEVELOPMENT AND OPERATION OF NUTRITION PROGRAMS FOR WORKERS

VITAMIN-FORTIFIED FOODS: THEIR PLACE IN INDUSTRIAL FEEDING

In selecting the foods to be served in an industrial feeding establishment or elsewhere, the "basic seven" classification of foods proposed by the War Food Administration is a useful guide. When it is not possible to secure sufficient amounts of foods of a given group, nutritionally equivalent substitutes often are available.

There are some staple foods to which certain vitamins and other dietary essentials are now being added in accordance with principles and policies adopted by such agencies as the Food and Drug Administration of the Federal Government, the U. S. Department of Agriculture, the United States Public Health Service, the Food and Nutrition Board of the National Research Council, and the Council on Foods and Nutrition of the American Medical Association. Enriched white flour and bread and fortified margarine are examples of products most likely to be of interest to food management faced with the responsibility of feeding a group of industrial workers. Other foods, the fortification of which has received official sanction, are milk fortified with vitamin D, and iodized table salt. Iodized table salt is valuable as a means of assuring a higher intake of iodine in areas where simple goiter is endemic.

Enriched white flour and bread are required by Federal regulation to contain specified amounts of thiamine, riboflavin, niacin, and iron. Enriched bread, if properly prepared from enriched flour or in other ways, will contain amounts of thiamine, riboflavin, niacin, and iron that will help to ensure a satisfactory intake of these dietary essentials by the public, under the general food conditions which prevail in the United States.

Whole wheat bread, or bread made from so-called "high-extraction" flour, should be used if this is at all feasible. Where food habits militate against the wide use of whole-grain flour or bread because a preference for white flour and bread is well established, the food management should make certain that the white flour and bread offered in the plant are of an enriched type. Similarly, if various other cereal products are used, preference should be given to those of the whole-grain, enriched, or vitamin-fortified type.

It is pertinent to mention here that in England and Canada enriched flour and bread, such as have been developed in the United States, are not available. The Ministry of Food in Great Britain has chosen to meet this problem through the development and promotion of a high-extraction flour to which calcium is added but synthetic vitamins are not. The bread made from this flour is commonly referred to as "England's war bread." In Canada the use of synthetic vitamins in foods is not encouraged and is actually forbidden by law in the case of flours and bread. Bread graded "Canada Approved" must be made from a flour specially milled to retain more of the vitamins and minerals, one specification being that it contain not less than 1.2 milligrams of thiamine per pound of white flour. When food services in industrial units and elsewhere are inspected by the Nutrition Services Division of the Canadian Department of Pensions and National Health, the use of this "Canada Approved" white bread as well as whole-grain breads is encouraged.

Edible fats entering into human dietaries are important not only as rich sources of energy but as carriers of fat-soluble vitamins. Butter is widely used as a "spread" on bread, rolls, crackers, etc., and is a source of vitamin A. Various combinations of vegetable oils and non-fat milk solids have been developed and marketed under the general name of margarine; their place in the dietary is similar to that of butter, and therefore their use is likely to increase when the supply of butter is small. When using margarine, the food management should see that the products selected are those fortified with vitamin A. Regulations of the Food and Drug Administration specify that such fortified margarines shall contain not less than 9,000 units of vitamin A per pound and any product claiming on its label to be fortified with vitamin A may be presumed to contain this amount.

Much research is being conducted on the preparation of mixtures of valuable foods which are available in considerable amounts but which are not used to the extent warranted by their nutritional value. Good examples of such foods are cottonseed flour, peanut meal, soybean meal, wheat germ, corn germ, and dried yeast. Some of the products made from these foods have been especially valuable for shipment in packages for war prisoners, for use in army rations, and for emergency feeding of the people of countries retaken from the enemy. It is pertinent to comment on such products here because their promotion for use in feeding industrial workers is usually based on claims made for high content of important dietary essentials such as proteins, vitamins, and minerals. If such products are offered for use in industrial feeding establishments, the food management should (a) weigh what nutritive and economic advantages, if any, such products have to offer over the use of available customary foods and approved substitutes for staples, as well as (b) demand scientific proof of the nutritive claims made for such products. This demand for proof is important because such products are the result of processing of some kind and it is well known that certain processes adversely affect one or more important dietary factors. Since rapid and inexpensive methods are now available for the assay of foods for vitamins, etc., the food management is not being unreasonable in insisting on scientific proof of the various claims made for a product.

THE USE OF VITAMIN AND/OR VITAMIN-MINERAL PREPARATIONS

All dietary surveys of industrial workers in the last few years have shown that the diets of the majority contain considerably less than the Recommended Dietary Allowances of one or more vitamins and calcium.

This situation could be improved by relatively small changes in the diets of most workers. For example, the survey of noon meals in one factory, quoted in an earlier section, showed that the inclusion of a raw vegetable salad would have reduced the number of "poor" meals bought from 61.2 percent to 22 percent; and would have raised the number of "fair" meals from 31.1 percent to 57.8 percent; and of "good" meals from 7.7 percent to 20 percent.

The situation could be further improved if industrial feeding establishments and workers at home were to use only whole-grain and enriched bread and flour, and fortified margarine when margarine is substituted for butter. The enrichment of cornmeal products would improve the diets of the workers in the Southern States.

None of the food enrichment measures in operation today can improve one of the most common of present dietary deficiencies, that of vitamin C.

Attempts to improve the diets of industrial workers by the use of vitamin-mineral supplements, if they are to be rational and effective, should be based on information regarding deficiencies in the diets of the workers; and the distribution should ensure that the workers ingest the supplement every day.

To obtain more definite information on the needs of specific groups of workers, a dietary survey should be made in each plant in which the use of a vitamin-mineral supplement is contemplated. Such surveys must be properly conducted and analyzed, preferably under the direction of the medical department, and the results should be used in assisting individuals in improving their eating habits.

The formula for the supplement should aim to raise the levels of the vitamin and mineral intake of the poorest-fed group of workers to the Recommended Dietary Allowances of the National Research Council.

The vehicle and method of distributing a supplement should ensure that all of the workers ingest it every working day. Experience has shown that where tablets or capsules are offered free to workers, even when left at the work bench, many do not ingest them every day unless consumption is actively encouraged every day. Many either forget to take them, throw them away, or take them home for a member of the family. The number of workers who use a supplement is still smaller when management merely offers it at cost.

A suitable vehicle for the supplement is a nutritious food. If such a food is attractive, a majority of the workers may be expected to look forward to getting it. The incorporation of vitamins and minerals need not affect its taste. The food base can supply additional nutrients, which are often needed. Indeed, in some cases, a food supplement may be found to make up the requirements, without fortification.

It is the opinion of some that workers will more readily accept vitamins and minerals when supplied in this manner as food elements (as distinguished from drugs or medicines) than when the supplement is given as a tablet or capsule, and hence will seek them in other foods. This might be expected to teach them a greater appreciation of the national food enrichment program. There are, however, supplementation programs in which capsules or tablets are distributed and employee participation is high.

In using any supplement, suitable personnel and equipment must be provided so that there will be minimum interference with production and so that it is handled safely, cleanly, and expeditiously.

A rest period appears to be the best time for the distribution of a supplement, whatever form is used. Only a small fraction of the rest period must be required to obtain the supplement. The use of the rest period for this purpose has the additional advantage of encouraging the habit of eating during the rest period.

The distribution of a supplement in the form of tablets, capsules, or wafers requires less equipment and planning than does the distribution of food, but the cost of measures necessary to ensure that the workers ingest the supplement daily should be taken into account.

Wherever a supplement is used, it should constitute only one feature of the nutrition program, which should also include: (1) improvement of in-plant feeding facilities, and (2) an education program directed toward helping workers choose better meals at the plant cafeteria and at home.

When a supplement program is instituted, its purpose and composition should be explained to the workers. The initial announcement should state frankly that the purpose of the supplement and of the whole nutrition program is to improve the health and state of well-being of the workers; that the supplement is provided because the majority of our population have unsatisfactory diets, and that certain dietary deficiencies (calories, protein, and possibly minerals) cannot be made good by the supplement.

The daily ingestion of a supplement can be a daily lesson in the importance of good nutrition. The lesson can be made effective because it consists basically of doing something every day. It has been observed[6] that when a supplement was provided under the conditions mentioned above, the workers were receptive to nutrition education. In some instances, they requested it of management. The quality of the meals bought in the following months at the company cafeteria improved noticeably; the workers selected more salads and more milk, and the total quantity of food bought increased. There is little danger, then, that workers will be satisfied with the supplement as a substitute for good meals. The educational effect of the supplement is analogous to that of the enrichment of flour and bread, which has made the public more conscious of the value of a good diet.

The use of vitamins in industry has been criticized on the following grounds: (1) It is of no value; (2) it entails a great waste of vitamins, because many people would receive more of some vitamins than they need; (3) vitamins should be taken only upon expert advice; (4) exaggerated claims in advertising lead people to expect greater benefits than they are likely to obtain; (5) vitamins in this form are expensive; (6) the vitamins used are synthetic, the inference being that synthetic vitamins are ineffective.

When the formula of the supplement is designed to meet common dietary deficiencies there can be no question of its value. There is little wastage of vitamins, since the appropriate formula contains only the kind and amounts of those vitamins and minerals necessary to raise the workers' diets to the levels of the Recommended Dietary Allowances. In some cases unfortified foods might make up this difference. There is no evidence that the vitamins, in prophylactic amounts, are toxic. Sound educational campaigns would counteract exaggerated claims made in advertising and lead to a definite improvement in the diet of the worker and his family. The wholesale purchase of the necessary vitamins and minerals in large quantities makes them quite inexpensive. All the vitamins likely to be used in a supplement for human consumption are either obtained from natural sources (A and D) or are the synthetic forms (thiamine, riboflavin, niacin, and ascorbic acid) and are identical in every respect, i.e., chemical constitution, physiological and therapeutic action, with the forms in food.

IN-PLANT NUTRITION EDUCATION

The one thing which every industry can do, whether it be large or small, is to provide some kind of nutrition education. Industries have an excellent opportunity to disseminate information about human nutrition. Admittedly, the effects of an educational program are difficult to evaluate. However, it has been shown that a well conceived and well run in-plant nutrition education program, correlated with a progressive in-plant feeding program, can be very effective in changing eating habits. In a study conducted by the War Food Administration [30] it was shown that 60 percent of the industrial workers eating in the cafeteria in one plant manifested a change in food habits due to an educational campaign closely tied in with the cafeteria operation. At the same time, within this group, there was a carry-over of the effect of nutrition education into the home, to the extent of 24 percent of the group. Included in the War Food Administration's study were three plants which confined their in-plant activities to pamphlets or incidental posters, with very little effect on the eating habits of their workers.

There are two ways of teaching workers the fundamentals about what to eat and why, first by printed illustrative material for mass education and second by individual and group instruction. There is a wide variety of nutrition material available today at little or no cost.*

Bulletin Boards should be placed in strategic locations: rest rooms, hallways, elevators, and, of course, the cafeterias or dining rooms. Exhibits are one of the oldest methods of presenting nutrition material. These can be in the form of posters, miniatures, food models, actual food displays, color transparencies, or movies. A periodical employees' magazine or paper reaches the greatest number of people and is carried into the home where wives, mothers, children, and friends can read its messages.

Doctors, scientists, dietitians, and nutrition workers must do all in their power to combat the nutrition fallacies that abound over the ether waves, in periodicals, and in papers. The government is making every effort to correct erroneous information and start people on a sound nutrition program that will build manpower, raise morale, and develop a country of strong and healthy individuals.

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* From the Government, U. S. Department of Agriculture, and Consumer's Guide; from commercial organizations dealing with food or equipment that maintain Nutrition Departments for the purpose of disseminating material to the public, such as: the National Live Stock and Meat Board, National Dairy Council, Wheat Flour Institute, Poultry and Egg Association, Insurance Companies, Home Bureaus, Electrical Companies, and other similar organizations.

Diet Lists: Overweight, underweight, ulcer, bland, and high vitamin diets or others requested can be given out by the company doctor, dietitian, or nurse. A week's set of suggested menus for reduction and underweight diets has proven helpful. Diet lists should be simple; otherwise anyone attempting to plan a day's menu gets confused and does not quite know how to juggle the array of foods to form a balanced diet.

Motion pictures are effective, especially when they are in color. Fruit and vegetables in black and white are not as appetizing as when seen in their natural colors. In the last two years some excellent educational films have been produced and are available for use at little or no cost.*

Group or class instruction has been successfully used by telephone companies throughout the country. If the course is carefully planned and the right techniques of classroom instruction are followed, satisfactory results will be obtained. Furthermore, it is probably the most economical way to reach large groups.

Individual instruction, however, is the most effective type of nutrition education in industry. This necessitates having a nutritionist or dietitian on the medical staff who is a graduate of one of the accredited colleges approved by the American Dietetic Association and who has a background of practical experience in dietetics. To her the plant physician refers cases of underweight and overweight, and individuals suffering from those conditions in which diet plays an important part, such as ulcers, anemia, diabetes, and the nutritional deficiencies. Many employees are sent to the dietitian following the pre-employment examination. Referrals may also be made through other channels, that is, staff nurses, departmental supervisors, personnel directors, and other employees. In many instances the employee seeks out the dietitian because of some educational material he has seen.

In a private interview with the employee, the dietitian first takes a food history, sets the goal, and then prescribes the proper diet. She outlines the necessary steps to accomplish the desired results. She also touches upon the values in sufficient rest and exercise, proper daily health habits, freedom from anxiety, a positive rather than a negative mental attitude, and a determination to follow through to the end. This consultation lasts from fifteen to thirty minutes. Regular weekly consultations, varying from five to thirty minutes, are held for as long as may be necessary, and progress is noted each time on a chart which is always shown to the employee. The time interval between visits is gradually lengthened according to the progress made. Generally ten to twenty visits are necessary for the desired result.

The dietitian should be one who is able to deal easily and agreeably with people and to be interested in their welfare. Her primary job is to humanize the science of nutrition. To do this she must make the diet so simple that anyone can understand it. Above all, it must be practical.

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* The "1,000 and One" Blue Book of Non-Theatrical Films may be secured from Educational Screen, 64 East Lake Street, Chicago, Illinois: This publication lists films and states whether they are for rent or for sale.

Individual consultation helps to reinforce a lagging will. With the overweights this is most important. It is also important with the underweights, as they are often in a discouraged and rundown frame of mind and have, over a period of time, reached the conclusion that it is impossible for them to gain. They usually give a history of having "always been thin" and of having tried innumerable ways of gaining. They frequently are sure that they inherited their leanness and that it is natural for them to be thin, and are certain nothing can be done about it.

Any nutrition program that is to be successful must teach. It is best not to say too much and what is said should be readily understandable. Habits must be made over and this takes patience, understanding, and continued interest. If a person can be given a good answer to "What difference does it make?" he has been started on the trail of good nutrition. Most people are "appearance conscious," and if they know they can gain or lose and look better—that is motive enough. Many are also "health conscious." The satisfaction of following a diet and accomplishing the desired result gives the individual a sense of pride and satisfaction that is a great morale booster.

Diet Consultation Procedure

A. Referrals from:
    - Pre-placement and later examination
    - Nurses
    - Personnel Division
    - Shop stewards
    - Foremen
    - Other employees
    - Employee himself, voluntarily

B. Routine Facts Determined:
    - Weight
    - Height
    - Age
    - Desirable weight (determined by physician after medical examination)
    - Referred by

C. Additional Information Obtained:
    1. Duration of:
        - Overweight
        - Underweight
        - Health complaints such as
            - Ulcers
            - Diabetes
            - Anemia
    2. Physician's recommendations and other pertinent data from medical history and examination

3. Food History:
    - Breakfast
    - Lunch
    - Dinner
    - Evening Snacks
    - Between Meals

D. Advice Regarding:
- Prescribed Diet
- Between Meal Feedings
- Vitamin Therapy
- Mental Attitude
- Will Power
- Rest and Exercise

E. Time Required for Consultation:
- First Visit 15 to 30 minutes
- Additional Visits 5 to 20 minutes depending upon degree of progress and questions that may arise

F. Progress Record Charted

G. Periodic Consultations

Weekly return visits are desirable to keep the patient "in tune with his diet." Later, as his degree of will power is determined, the time can be adjusted accordingly, but, at the beginning, close track should be kept of his rate of progress.

H. Completed Record

John Jones:

Date	Weight	Height	Desired weight	Age	Referred by
4/3/44	212	6′	190	49	M. D.

Overweight 3-4 years. Feels fine but blood pressure slightly increased

Food History:

Breakfast—Cereal, 3 slices toast and coffee
10 o'clock—1½ Sandwiches
Lunch—1½ Sandwiches and milk or soft drink
4 o'clock—1 Sandwich and milk
Dinner—Meat, potato, vegetable, salad, 2 slices bread and butter, coffee, and dessert

Advised:

Diet to Lose Weight; Vitamins

Result:

Lost from 212 to 183½ in 13 weeks. Stated he didn't realize how much bread he had been eating and is pleased with his "girlish" figure. Referred back to doctor for check-up; blood pressure now normal. After he reached 190, he felt that he would like to lose another 10 pounds to get rid of more of the waist line. The physician in charge agreed that this would be desirable. Feels fine now and is surprised how much he can eat and still lose.

The value of such individual education service goes far beyond the mere giving of information on proper food and diet. As good health habits are interdependent, it offers an opportunity for a properly trained dietitian to instruct employees concerning their health in general.

It becomes increasingly evident, moreover, that other factors are playing a part in the employee's condition. Many employees suffering from emotional maladjustment show it by the symptoms of overweight, underweight, and other dietary abnormalities. An extremely underweight person is apt to be nervous or overly active or hypersensitive, perhaps bothered by insomnia or worried about himself or his family. Extreme overweight is no longer associated with a happy-go-lucky attitude toward life but instead may indicate emotional deprivations which cause the individual to nibble at sweets and overeat generally, thus compensating for a lack of the more lasting satisfactions. Ulcers, as is generally known, are found in individuals overly anxious and under great nervous strain. The employee is often unaware of the emotional factors that have caused his condition, but he is conscious of his reactions to the condition itself; for example, he is irritable, ashamed of being too fat or too thin, feels conspicuous, and is disturbed because of easy fatigue. Certainly all of these deviations from normal health and appearance bring discomfort if not actual unhappiness.

The emotional difficulty may be so deeply buried that only an expert should undertake its solution, but, if the dietitian is conscious of the part emotions play in nutrition, she is in a position to do a better job. She must be aware of this interplay between physical and emotional health, and actually it is in meeting many of the emotional needs of the individual that she makes her biggest contribution. At least some of these needs are met in the weekly interviews and the dietitian should be fully aware of what this means in the lives of the employees, many of whom thrive on attention and interest. The weekly report and charting of progress, the obvious interest of someone in his appearance, a sympathetic listener with whom to discuss problems, personal or otherwise, is most heartening and bracing to the employee. It boosts morale, brings to light inarticulate fears which, once seen, are not so frightening as when buried and neglected, and makes possible some solutions which otherwise might never have been found. These more intangible results of the employee-dietitian interviews are still to be explored, but they are implicit in this friendly relationship extending over several weeks.

Typical cases are as follows:

1. Middle-aged man recuperating from pneumonitis, wants diet to gain. He is nervous, unduly tired, fretful, and worried. Gained from 138 to 157 and felt much better.
2. Girl. Her boy friend was home on leave and told her she didn't look well and to gain some weight. Gained 10 pounds. Boy friend happy.
3. Man, aged 47, 5′ 10½″. Underweight all his life. Anorexia, insomnia. Gained from 119½ to 136. Still on diet.
4. Man, aged 52, slight heart condition so doctor advised a diet but "doubts" if he will follow it. Patient says he has been overweight from lack of exercise, but food history reveals he has never eaten

fruits and vegetables and dislikes them very much. Never drinks milk. Later: States he is eating vegetables "other than potatoes and baked beans" for the first time in his life. Has cut the beer down to 3 glasses in 3 weeks instead of 3 bottles a day. Has to admit that he feels better. His whole family are eating vegetables—"even the kid," who never used to. Lost 22 pounds. Blood pressure normal.

5. Man has weighed 129½ since 1935. When in the Army weighed 150. He is blue and discouraged. Wife died a year or so ago and his daughter goes out in the evening and then he gets lonely and he goes out too—and drinks—then gets tired from lack of sleep—vicious cycle. He has agreed to cut out the week-end benders and to "give John Barleycorn the slip" until he gains some weight. Last week he was "tight" most of the week-end—then couldn't sleep and couldn't eat. Later: Still depressed. Has moved to a hotel where he'll have regular meals and more rest. Has gained 5 pounds—feels much better, has stopped drinking. Later: Gained another 4 pounds.
6. Woman, age 39, height 5′ 4″. Has been out ill for several months, nervous breakdown. Says she is sure she can't gain any weight but will try. Gained from 99 to 110 in seven weeks. The next 5 pounds took several months.

The value of such a program in the field of industrial relations is obvious. The dietitian's interest in the employee should typify the company's genuine interest in him, thereby helping to make him a more contented person and a more loyal employee. Better health, both physical and mental, makes for greater contentment and raises the quality of work performed.

Summary and Recommendations

All dietary studies indicate that a large portion of the industrial population is obtaining an unsatisfactory diet.

Nutritional appraisal studies in recent years have shown that relatively few persons show evidence of acute, severe nutritional deficiency disease. However, signs and symptoms often associated with proven malnutrition are exhibited by many people in all economic, occupation, and age groups.

A proper diet consists of sufficient carbohydrate and fat to provide calories necessary for the work to be done, together with the needed protein, vitamins, minerals, and water, the whole properly distributed throughout the day. Vitamin and vitamin-mineral concentrates, while important when properly used, should not be regarded as substitutes for ordinary foods, but as supplements. When employed, supplements should be designed to raise the total dietary of the workers to the levels of "The Recommended Dietary Allowances" of the National Research Council.

Malnutrition may result from limited income, poor food habits, ignorance, indifference, and the unavailability of proper foods. Poor food habits, ignorance, and indifference are important causes of malnutrition in industrial workers.

Industry can do much to help combat malnutrition in workers by making better food available at reasonable prices in convenient and attractive eating establishments.

If one is to enjoy optimal health through nutrition, foods must be properly processed, intelligently selected, and carefully prepared. Present practices in these three categories leave much to be desired.

Education on the proper selection, preparation, and consumption of foods is important in attacking the malnutrition problem. One must expect slow progress through education, primarily because food likes and dislikes are generally ingrained, being the result of custom, taste, and tradition. Unfortunately, mere knowledge of good nutrition does not make people give up bad eating habits or practices.

The Food and Nutrition Board of the National Research Council adopted, April 20, 1945, a "Recommendation for Peacetime Continuation of the Industrial Nutrition Program," which is subscribed to by the Committee on the Nutrition of Industrial Workers. The text of this recommendation follows:

"The Food and Nutrition Board of the National Research Council herewith brings to the attention of the Government the necessity for the continuation of a governmental nutrition program for industrial workers beyond the conclusion of the war.

"Considerable progress has been made in protecting and improving the dietary and nutritional status of industrial workers during the war period. This has paid dividends to the country in terms of health, morale, stability, economy, and production. The need for governmental guidance and assistance with nutrition programs for workers and their families will continue after the war. Many fundamental problems are awaiting solution.

"The objective of the peacetime program must be the protection of the health of the worker and his family. However, a further important gain from an effective program operated with this objective would be an increased and a steadier consumption of agricultural products, particularly those of high nutritive value, and greater returns to the producer.

"The program should be set up on a permanent basis and should be organized so as to provide the services of experts in the various phases of the problem to industry and labor. It is imperative that high professional standards be maintained by the Government in employing specialists in this field.

"The nutrition program should be integrated with other industrial hygiene and medical programs and should be developed in close working cooperation with State and local health agencies. Present State programs should be encouraged to continue, and programs should be instituted in those States now without them.

"The nutrition program for workers should be correlated with similar nutrition programs for other groups in the community.

"The development of effective educational techniques and the stimulating and sponsoring of research on food needs, food habits and the nutritional status of workers comprise two of the major components of the peacetime program. There is especially pressing need for reliable information on the contribution improved nutrition may make toward the protection of workers exposed to industrial hazards such as toxic chemicals and adverse environmental conditions. The needs of women workers also call for particular attention."

The Committee further recommends that industrial establishments should, whenever possible, determine by surveys the need for supplementation of the workers' diets, taking into consideration the nature of the work performed and the possibility of exposure to injurious chemicals. Dietitians and nutritionists, in collaboration with industrial physicians, can conduct such surveys efficiently even among large groups of workers.

The Committee welcomes the opportunity to advise on the setting up and carrying through of controlled nutrition appraisal studies to determine the extent of malnutrition and to measure the improvement resulting from a nutrition program. The Committee will also welcome information on effective methods for carrying out nutrition education among industrial workers.

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The National Research Council

Membership and Organization.—The National Research Council is a cooperative organization of scientific men of America, including also a representation of men of affairs interested in engineering and industry and in the basic sciences upon which the applications of science depend. Its membership is largely composed of accredited representatives of about eighty-five national scientific and technical societies. Its essential purpose is the promotion of scientific research and of the application and dissemination of scientific knowledge for the benefit of the national strength and well-being.

The Council was established at the request of the President of the United States, by the National Academy of Sciences, under its Congressional charter to coordinate the research facilities of the country for work on military problems involving scientific knowledge. In 1918, by Executive Order, it was reorganized as a permanent body for the general encouragement of scientific research.

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First Report—The Food and Nutrition of Industrial Workers in War Time. National Research Council, Reprint and Circular Series Number 110. April 1942. 17 pages. Free.

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UNITED STATES DEPARTMENT OF AGRICULTURE

ADVANCE RELEASE:
For Friday Morning Papers,
July 28, 1944

Cleared and Issued
Through Facilities of the
Office of War Information

More War Workers Fed On The Job

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About five million workers in approximately half of the U. S. manufacturing plants engaged in war work can now obtain mid-shift meals on the job, according to a nation-wide survey reported today by the War Food Administration. Another half million in other manufacturing industries also have access to food on the job. The survey covered 2056 manufacturing plants, a representative cross-section of plants throughout the country working on war contracts.

New food services and expansion of existing facilities now being planned will provide in-plant food service for one and a half million additional workers, WFA estimated on the basis of survey returns.

The survey report indicated that 81 percent of the workers employed in the manufacture of war supplies were in plants having some type of food service facilities. It was pointed out that need for further expansion is shown by the fact that actually only 39 percent of the workers in these plants are obtaining mid-shift meals.

The most extensive development in industrial feeding is shown in the large plants. According to the survey, ninety-one percent of the plants having more than 2500 workers and 80 percent of the plants employing from 1,000 to 2499 now have some type of in-plant feeding facilities. In small plants, however, only 28 percent have food services.

The large plants also show the highest percentage in the groups planning new installations and expansions. Forty-one percent of the plants employing more than 2500 workers reported they are planning new installations, the majority of which would include cafeterias, the most permanent type of in-plant food service. Other types of facilities include lunch counters, lunch stands, and stationary or mobile canteens.

The type of facility in use varies according to plant employment size. Four of every five plants with 2500 or more employes, where facilities are provided, have cafeterias; while only one of every five plants employing less than 250 have them.

In addition to the survey of the 2056 manufacturing plants, returns were received from large plants in shipbuilding, aircraft and other essential war industries. These latter showed that although 91 percent of the large shipyards have some type of food service, only 35 percent of their workers are being served mid-shift meals. In the aircraft industry, 97 percent of the large plants have facilities, and 68 percent of the workers are being served.

While the survey returns show that there is a widespread provision of on-the-job food services, WFA points out that less than one-half of the existing facilities are adequate. This conclusion is based upon field reports and the survey results, which show that only 44 percent of the plants with food facilities are serving 60 percent or more of their workers.

Assistance to plants where improvement of existing food service is needed, as well as assistance in planning new installations and expansions, is provided by WFA industrial feeding specialists. These specialists are equipped to make on-the-ground studies and recommendations to management. The request for the service may come from management, or from the procurement agencies, or WPB. If the findings of the industrial feeding specialist are acceptable to management and labor, the follow-up services provided by WFA include certification to WPB of need for equipment, advice on efficient operation, menu planning and food purchasing, and nutrition education programs for better health and efficiency of workers.

These services are provided without cost by industrial feeding specialists located in the WFA's Office of Distribution regional offices in New York, Atlanta, Dallas, Chicago and San Francisco.

Although the Civilian Food Requirements Branch of the WFA's Office of Distribution has the major responsibility in the development of the industrial feeding program, essential aid comes from other Government agencies. Coordination of the various phases of the program is achieved through an Inter-Agency Committee on Food for Workers. Member agencies, in addition to WFA, are the War Production Board, War Manpower Commission, Office of Price Administration, United States Maritime Commission, War and Navy Departments; Federal Public Housing Authority, of the National Housing Agency; Federal Works Agency; and the U. S. Public Health Service, of the Federal Security Agency.

END OF ADVANCE RELEASE: For FRIDAY MORNING Papers, July 28, 1944.

Robinson

June 24, 1944

To: Dr. Eliot
Children's Bureau

From: Mary Anderson

Subject: "Manual of Industrial Feeding" prepared by the Committee ~~on the Nutrition of~~ Industrial Workers of the Food and Nutrition Board of the National Research Council, Washington D.C.

We appreciate immensely the opportunity given us to review this report. It is an excellent presentation - both comprehensive as to the scope of this broad subject, and complete as to details. The standards, methods, and procedures outlined in regard to every phase of the subject are both scientific and practical.

Altogether the report would seem to be invaluable to all concerned in any way with the problems of industrial feeding, whether from the plant, community, or educational viewpoint. The Committee in collecting and coordinating data from many different sources has made an outstanding contribution.

We note with interest the special discussion of the needs of women workers, and appreciate the reference to the Women's Bureau report on women's lunch and rest periods. We wish to suggest a change in regard to this material, namely that you substitute on page 18 for the paragraph 2 of the findings the following statement from the same study:

> Of greatest importance in building up resistance to disease of occupational as well as general origin is proper nutrition and the prevention of chronic fatigue . . Early studies of lead poisoning give some evidence that the excessive sickness of women workers was due to their relatively poorer state of nutrition. The women were paid lower wages than men, and their food budgets were on a lower scale.

We think it is a sounder and more pertinent statement to use in this connection.

Another suggestion that we might make relates to Chapter V dealing with the Educational Program. We think some part of such program might be especially pointed up to women workers and their food habits on the job, in view of the tendency of some women not to eat sufficiently substantial food when doing manual work that uses up considerable energy.

We would like very much, if possible, to secure a copy of the Manual for our files and to know how copies may be obtained by plants, community agencies and others who would undoubtedly find such information of great assistance.

MVR:IS
JM

~~Fox~~
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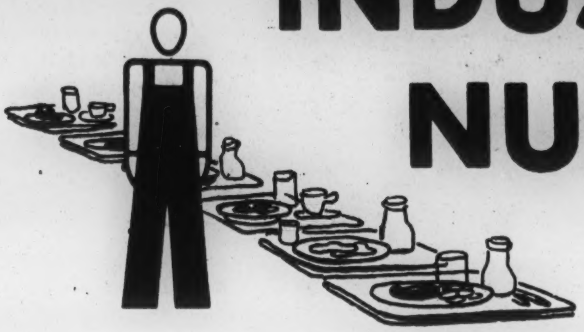
Robinson

MONTHLY

INDUSTRIAL NUTRITION SERVICE



For employee publications, and individuals and groups promoting nutrition education

WAR FOOD ADMINISTRATION, Office of Distribution

Industrial Feeding Section
150 Broadway, New York 7, N. Y.

April, 1945 No. 7

FEATURE HOT, NUTRITIOUS SOUPS IN MEATLESS MEALS

When planning meatless meals, take a tip from grandmother's cookbook and feature a hearty piping hot soup for dinner once a week.

Serve it in a large bowl or soup tureen, ladling it out right at the table to encourage second helpings. Then serve a salad or a vegetable dish containing eggs, cheese, or other meat alternates. Top off the dinner with a custard dessert. That's a meal which is appetizing, nutritious, and easy on the red points. It's a meal all members of the family will enjoy.

Soups made with milk, or dry peas, or beans, or fish are good sources of protein. Dry pea soup, rich in protein, iron, and vitamin B_1, is a perfect soup for a meatless dinner, and dry peas are in abundant supply this month and may be used liberally.

USE LEFT-OVER VEGETABLE JUICES FOR APPETIZING SOUPS

In France where thrifty use of available foods has developed a world famous art in cooking, the soup pot has long been a national tradition. The French housewife keeps the castiron soup pot on the back of the stove and into it goes every usable scrap and bone--trimmings from roasts, bits of vegetables, vegetable liquors, chicken bones.

Take a leaf from the Frenchwoman's cookbook, and store vegetable liquors in an ice box jar to be used as a flavorful mineral-and-vitamin-rich soup stock.

Serve cream of asparagus and cream of spinach soup, using your own vegetable liquors. The added milk gives extra food value. If you have difficulty getting your family to drink their daily requirement of milk--one quart for each child, one pint for each adult--serve cream soups often, as they are excellent "milk carriers."

The following are menus built around soup which will provide a hearty meal when meat is scarce:

Menu No. 1

Fish chowder
Saltine crackers
Tomato, lettuce, and green pepper salad with French dressing
Whole-wheat bread with butter or fortified margarine
Lemon meringue pie
Milk

Menu No. 2

Split pea soup, with toasted bread squares
Mixed green salad with hard-cooked eggs
Dark rye bread with butter or fortified margarine
Raisin-rice pudding
Milk

Menu No. 3

Cream of vegetable soup
Baked potato
Fruit and cottage cheese salad
Whole-wheat bread with butter or fortified margarine
Spice cake, with maple frosting
Milk

Menu No. 4

Cream of potato soup with onions
Salad plate: American cheese and bologna slices, cabbage salad, and tomato wedge
Enriched bread with butter or fortified margarine
Chocolate bread pudding
Milk

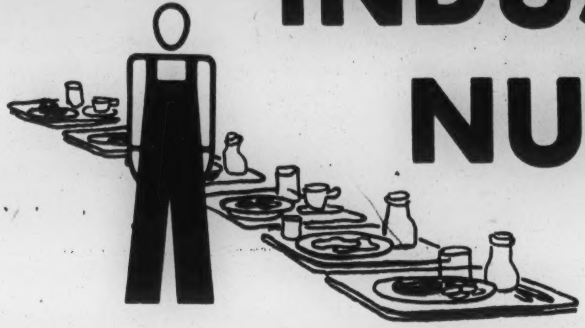
The following bulletins will be found helpful in planning family meals:

"Dried Beans and Peas in Wartime Melas," AWI-47.
"Potatoes in Popular Ways," AWI-85.

These publications may be obtained in limited quantities, without charge, from the Office of Information, Department of Agriculture, Washington 25, D.C.

MONTHLY

INDUSTRIAL NUTRITION SERVICE



For employee publications, and individuals and groups promoting nutrition education

WAR FOOD ADMINISTRATION, Office of Distribution
Industrial Feeding Section
150 Broadway, New York 7, N. Y.

March, 1945 No. 6

FOOD OPERATORS OBSERVE JERSEY CAFETERIA

Food preparation in the kitchen and service lines at the cafeteria of the Office of Dependency Benefits, Newark, New Jersey were observed by food operators of the Industrial Nutrition Committee for Essex and West Hudson Counties at their last meeting.

The cafeteria, which serves several thousand meals per day, is operated by the Howard Johnson Co.

Maintenance of four counters for hot dishes and one for sandwiches and salads makes for quick and orderly food service. To keep the service lines moving quickly, mimeographed copies of the day's menu are made available to employees of the office in advance.

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CONNECTICUT MEETING

Meal planning under wartime conditions, rationing regulations, and personnel problems were discussed at the second meeting of the Nutrition in Industry Committee of the Connecticut State War Council. The meeting was held at the cafeteria of the Edwards Company, Norwalk, Connecticut

WAR PLANT NUTRITION PROGRAM SUBJECT FOR HEALTH COMMITTEE

A program relating to war plant nutrition has been planned for the next meeting of the Health Section of the Industrial Nutrition Committee for Essex and West Hudson Counties of New Jersey to be held Wednesday, March 28 at 1:30 P.M. at the Academy of Medicine, Newark, N. J.

"The Relation of Industrial Toxins to Nutritional Needs of the Worker" and "Determining Nutritional Deficiencies in Workers" will be discussed by Dr. John H. Folger and Dr. Normal Joliffe.

The meeting is expected to be of particular interest to health departments, cafeteria operators, safety, welfare, and personnel departments, physicians, and nurses.

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Future meetings are being planned at several plant cafeterias so that differences in operation, menus, equipment, personnel management can be observed and adapted where feasible.

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NATIONAL WARTIME NUTRITION GUIDE is available in quantity upon request. The leaflet points the way to good menu planning and easy food shopping by dividing foods into seven basic groups. Some food from each main group should be served daily. Write War Food Administration, 150 Broadway, New York 7, N.Y.

MEAT EXTENDERS, ALTERNATES

BALANCE POINT BUDGET

Meat rationing gives everyone an opportunity to buy a fair share of the available meat, but it does not, of course, always provide for a choice quality of meat. Because the country's meat supply was becoming tighter, many point-free cuts went back on the ration list early this year so that everyone could get a share of the available supply.

Today the housewife is confronted with the problem of providing her family with nutritious meals which use the available meats and which the family will enjoy. The problem requires skill and resourcefulness, but the point-thrifty housewife accepts the challenge as a part of her wartime routine. She balances her ration points through careful meal planning, she considers it her patriotic duty to make use of the available foods, and she gives her family meals which are nutritious and delicious, too. Here's how she does it.

She Knows Her Meat Extenders

Meat-extender dishes are made by combining meats with other foods, such as vegetables, cereals, legumes, milk, and eggs. When meats are extended it must be remembered that the meat flavor is extended but its food value; therefore, good-sized portions of meat-extender dishes should be served. If a comparatively small amount of meat has been used in the main dish, the protein value of the meal may be improved by serving a dessert made with milk and eggs. For example, if stuffed green peppers have been served as the main dish, then the nutritive value of the meal will be improved if baked custard is used as the dessert.

She Knows Her Meat Alternates

Meat alternates are those dishes used in place of meat. Poultry, fish, cheese, eggs, milk, dry peas and beans, soybeans, and peanuts are all good sources of protein and can be used as meat alternates, interchangeably with meat. Legumes and nuts, however, contain protein of lower nutritive value than animal protein. When these are used as alternates for meat, the nutritive value of the meal is improved by serving milk, cheese, or eggs, whether in combination with or accompanying these meat alternate dishes.

She Knows and Uses the Point-Free Meats

Ration-free Utility lamb and veal are good meats and are just as high in nutritive value as top grades of the corn-fed meats. The secret of a delcious main dish of Utility meats is in the cooking -- low temperature with moist heat. Stews, meat pies, meat loaves, boiled dinners of the point-free Utility lamb and veal or the point-free mutton help to balance the family ration-point budget.

Other no-point meats for the family are hearts, kidneys, lamb and pork liver, sweetbreads and tongue. Don't be discouraged if at first the family is inclined to turn up their noses at these cuts. Try them again, in various ways, because often an unfamiliar food, spurned at first introduction at the family table becomes a favorite if given half a chance. The stuffed heart and the beef and kidney pie, unfamiliar to many a family before the war, are now popular with many.

She Serves Well-Planned, Nutritious Meals

Planning is more than half the

(Cont on Page 3)

PLANNED MEALS (Cont. from Page 2)

battle. When each day's meal must be made around the meat available in the market, last-minute shifts must often be made at the butcher's counter. This demands that meal plans be flexible so substitutions can be made readily.

The following menus for one week show how a family of four can have good, nutritious dinners by using the currently abundant foods. These dinners are easy on the pocketbook as well as on the ration points:

Sunday

Chicken fricassee
Mashed potatoes - Green beans
Orange salad
Hot biscuits - butter or fortified margarine
Vanilla ice cream - honey sauce
Milk

Monday

Lamb stew with potatoes, onions and carrots
Red apple and celery salad
Enriched bread
Butter or fortified margarine
Hot gingerbread
Milk

Tuesday

Braised stuffed beef heart - Gravy
Parsley potatoes
Green peas - Celery curls
Whole-wheat bread
Butter or fortified margarine
Chocolate pudding
Milk

MENUS

Wednesday

Pot roast of beef - Gravy
Browned potatoes - Spiced beets
Shredded lettuce salad
Enriched bread
Butter or fortified margarine
Raisin rice pudding
Milk

Thursday

Spaghetti with meat sauce
Cooked carrot strips
Mixed green salad with French dressing
Whole-wheat bread
Butter or fortified margarine
Baked custard
Milk

Friday

Broiled fillet of halibut - Lemon slice
Fresh spinach - Baked potatoes
Chopped cabbage and green pepper salad
Enriched bread
Butter or fortified margarine
Oatmeal cookies
Milk

Saturday

Pork Sausage
Baked sweetpotatoes
Boiled green cabbage - Crisp carrot sticks
Whole-wheat muffins
Butter or fortified margarine
Baked apples with top milk
Milk

MAKING THE MOST OF THE MEATS IN INDUSTRIAL FEEDING

is just off the press

Fill out and return this form if you wish a copy

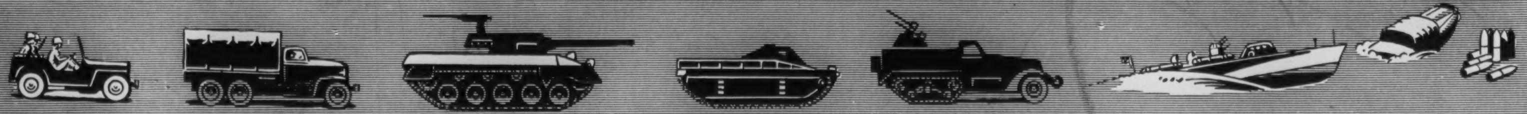
Plant name ______________________________

By (title) ______________________________

Address ______________________________

Clip and send this form to the War Food Administration, 150 Broadway, New York 7, N.Y.

Automotive
WAR PRODUCTION



Vol. IV No. 2 Published by Automotive Council for War Production March, 1945

More War Goods Produced With Automotive Methods

Industry's Efficiency Stepped-Up By Improved Tooling Techniques

DESPITE the huge influx of new and inexperienced workers, the automotive industry in the past year and a half has been able to step up its production efficiency until deliveries of fighting equipment have reached a record $10,000,000,000-a-year rate.

This improved efficiency results from better machine methods, ironing out bottlenecks caused by lack of critical production tools and scarcities of materials, and the overcoming of many other initial production handicaps.

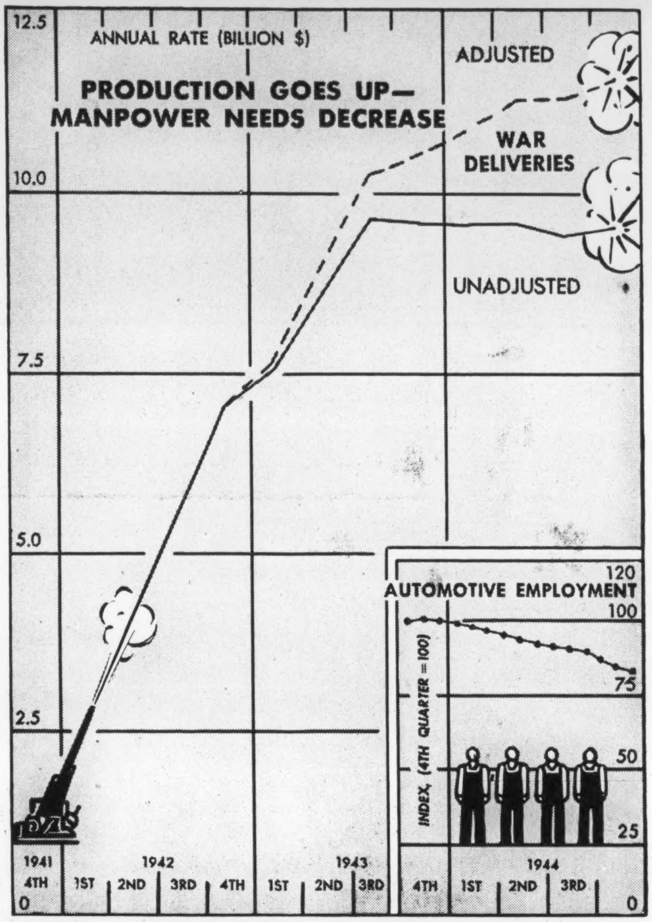
As a result of these continuing improvements in the industry's mass production techniques, the actual quantity of manpower needed to sustain this volume has shown a small but steady monthly decline in the last year.

Between the fourth quarter of 1943, when automotive employment reached an all-time high, and the corresponding quarter in 1944, deliveries of war materials to the armed forces rose approximately 11 per cent. During the same period employment dropped some 16 per cent.

By the close of 1943, the great bulk of the tooling for war production had been completed, two full years of experience had been accumulated on once untried products, and the slender flow of parts and materials from suppliers had become a steady stream, pouring into assembly plants from nearly every state in the nation.

When the industry entered the current year, war production had reached totals not even adequately reflected by the huge $9,300,000,000 dollar-volume figure, itself a tenfold increase over 1941's defense production. The actual physical volume of deliveries was appreciably larger than the production figures indicate because of voluntary price reductions which enabled the government to acquire war products at two-thirds the cost prevailing three years ago.

Included in the production and delivery of this vast total of war materials are millions of units of combat equipment. Some 3,392,000 engines for military trucks (2,775,000), aircraft (345,000), marine (148,000) and tanks (124,000) have been produced since the start of the industry's war program. Military truck and tank production amounted to 2,387,000 units, made up of 2,220,000 trucks, 41,800 land and amphibious tanks and 126,000 gun carriages and armored cars. Gun units manufactured total 4,741,000, comprised of 2,700,000 carbines and rifles, 1,260,000 machine guns, 144,000 anti-aircraft weapons and 637,000 other types.

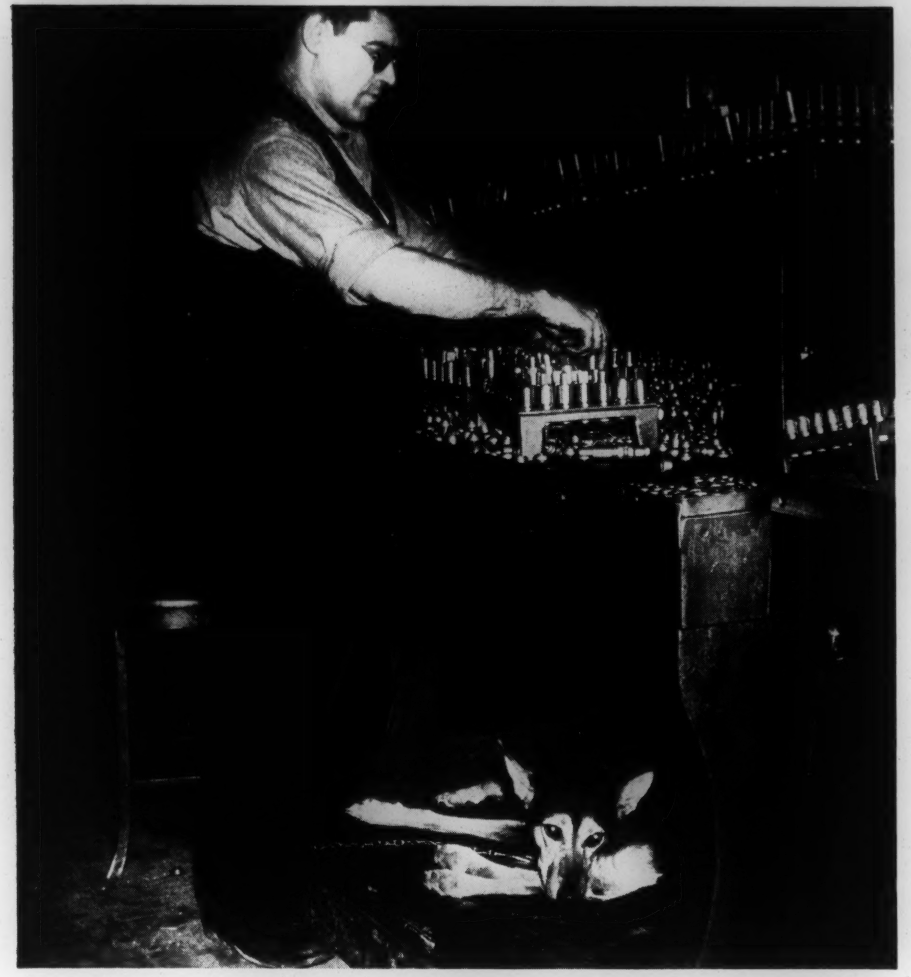


Actual dollar deliveries, including price reductions, are shown by the solid line. Had prices remained unchanged since the fourth quarter of 1942, however, the industry's output would follow the broken line, which gives a more accurate reflection of the physical volume of war work performed.

Today, as demand for weapons increases with each new military move, the industry's output continues to rise. New orders pour in for rockets, bomber planes, bombsights, high-powered aircraft engines and shells. In one manufacturing center, $750,000,000 of new contracts have been placed with motor plants alone since the first of January.

The weapons of war, far more complicated to build than peacetime cars and trucks, now have been fitted into the automotive industry's mass production pattern successfully. By this time even contract cancellations, cutbacks and continuous design changes have been encountered often enough so that handling them does not cause major disruption of the day-to-day outpouring from automotive plants.

Rehabilitation Programs Enable Handicapped To Fill Essential Jobs in Automotive Plants



Parts for aircraft engines are assembled by a blind automotive worker.

SIX DAYS a week, fifty-two weeks a year, a sightless man and his Leader dog step confidently from a public conveyance and pass through the guarded entrance of a large automotive war plant.

Gently tugging at the leash, the dog guides his blind master down long aisles, through the maze of busy machinery singing the high C of war production, skillfully avoiding obstacles and other workers hurrying to or from urgent jobs.

In a department where handicapped and ordinary persons work side by side, the blind man takes his place at a bench and begins sorting and fitting together small parts which ultimately go into aircraft engines. Under the bench on an especially built resting place, the dog lies quietly until commanded to escort his master to another part of the plant, or to retrace his steps at the close of the day.

Injured several years ago, the worker is one of thousands of physically handicapped persons who have carried on in spite of their afflictions and have been successfully fitted into worthwhile jobs in the automotive industry. Among others who have found useful, prideful and gainful work in the industry are deaf mutes, diabetics and people who have lost limbs.

In the eyes of automotive industry rehabilitation experts there are no "disabled men," and no jobs are "created" for the handicapped. For example, persons who have lost a foot, a leg or both legs are given a sitting down job; those with a hand or an arm missing are placed on jobs operated with one hand; men who have lost both hands or arms are put on machines operated by foot; the sightless perform operations where touch and practice are the chief requirements.

At one automotive parts company a 24-year-old blind man edits a bimonthly newspaper for employes. With the aid of a Leader dog he roams the plant and digs up articles for the publication. He writes the stories, reads proofs by feeling the type with his fingertips and designs the pages.

For 20 years another company, with facilities in several widely scattered communities, has hired persons with physical shortcomings in proportion to the population in the plant cities. Altogether, some 11,300 handicapped or physically limited workers are on the company's payrolls.

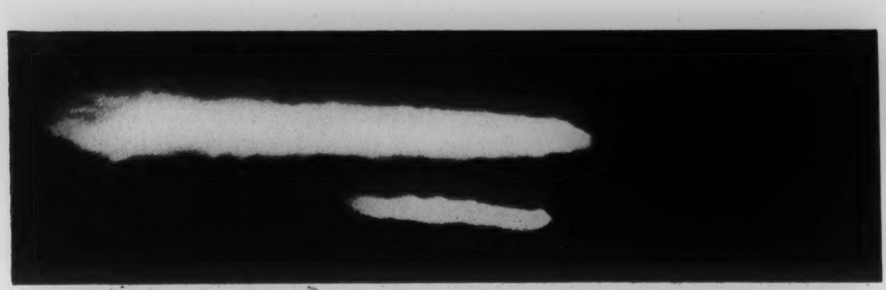
In this group, 687 are sightless in some degree, including 40 who are totally blind; many can only distinguish between light and dark; a few see motion if it occurs between them and the light. Sixty-six are deaf mutes; 80 have lost one arm; 12 have lost both arms; 91 have one leg amputated and 10 are legless. In addition, 31 have lost the use of some part of their bodies because of spine fractures.

The totals of handicapped workers employed in the automotive industry have only recently begun to reflect the discharges being given to wounded veterans of World War II. Automotive companies generally, however, are studying their procedures for employing the handicapped with an eye to their own workers now in the services; preparations for the job placement of those who may return partly disabled are already being made.

Cigarettes Hard to Get? Motor Plants Help Out

RECENTLY, two motor firms developed programs for the equitable distribution of their limited cigarette supplies. Instead of placing a few packages on sale daily at lunch wagons, in cafeterias and candy stores, both companies hold up incoming shipments and designate a regular day as "Cigarette Day." Meantime, coupons, good for a pack, are issued with paychecks.

While the principle of distribution is the same for both companies, the plans vary slightly in operation. One company accumulates a supply sufficient for 85 per cent of its workers and makes weekly sales. The other holds back its sales until at least one package for each employe has been acquired.



Automotive Firms Convert Production Lines To Meet Stepped-Up Demands for Navy Rockets

To send hot death with a fiery tail streaking through the sky toward an enemy, you must first obtain a piece of metal tubing. Then cut threads in one end of it, weld on launching buttons and attach four guide vanes to form a tail. Next, insert the power expulsion cap in the hollow tail end, add the explosive and the war head, and you will have a rocket to do the job.

Now one of the most vitally needed war weapons, rocket production has been vastly stepped up with quotas for the Navy alone boosted 300 per cent over 1944 as orders for $1,000,000,000 worth of these projectiles fanned out across the country. Responsibility for a large share of this volume rests on the automotive industry, with $156,000,000 in rocket orders assigned to 17 prime contractors and 800 subcontractors in one automotive producing center.

To fill tremendous requirements for a 2¼-inch practice rocket designed for pilot training, the Navy had previously turned to an automotive company which in peacetime specialized in the production of light-weight cars and delivery trucks. Since widespread pilot training must precede broad use of a new air weapon, production quotas running into six figures monthly were set, and the company, then manufacturing torpedo engines, was asked to take on a job calling for high speed conversion.

While the company was finishing the contract for torpedo engines, the rocket job requirements were studied by production and tooling experts and broken down into 25 simple operational steps. The production line was planned and charted, the required equipment designed and ordered. Subcontracts were let to suppliers, pilot models were built and tested, and the plant was made ready to wade into the new contract without loss of time.

Testing equipment to control quality was designed by the automotive engineers in advance, and when orders for it could not be filled in time, the company's machinists "rolled their own" out of miscellaneous parts of other machinery, old angle irons, pressure gages, and the like. One such testing apparatus forces pressure inside the hollow center of the rocket, to make certain that it will sustain the pressure of 500 lbs. per square inch exerted by the combustibles which discharge the projectile toward the objective.

As the last torpedo engine progressed through the plant, workmen tore out the old assembly line and moved in rocket production equipment. Although much substitute machinery had to be utilized, full-scale production was achieved in only thirty days.

Victory Shift Helps Plant Top Schedules

Townspeople Pitch In To Produce Rockets

"Please pass the rockets, Mrs. Jones!"

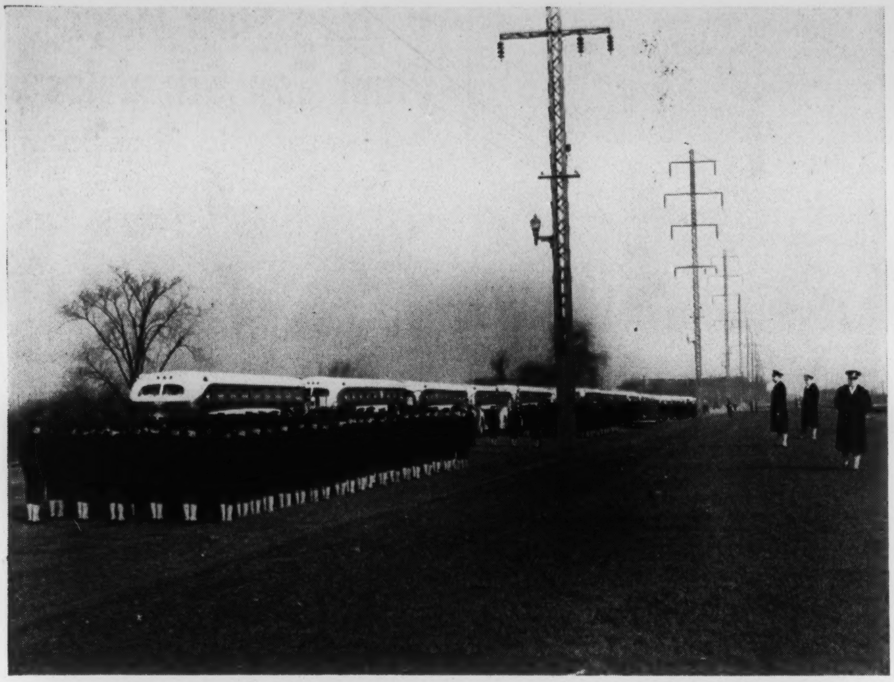
This is the theme of a patriotic group of citizens in a medium-sized eastern community who spend their "after hours" working in an automotive war plant.

Composed of housewives, widows living on pensions, retired workers, farmers who till their fields all day, retail store proprietors and clerks, the group turns out aircraft rockets for the Navy from six to eleven every night, supplementing the production of two regular day shifts.

Situated in a rural area containing a limited number of industrial workers, the company found its employment quotas depended upon simplifying the production method to make it possible for any man or woman to learn a job within a day or two.

The "Victory Shift" was the answer. Its success enabled the company to report that schedules for rocket production, in six-figure quantities, were being met in the second month of operations.

Rockets to blast Tokyo are loaded in a fighter plane by Navy crewmen.



Throughout the war intercity buses have tackled many special assignments.

Intercity Buses Handle Majority of Travelers Despite Acute Wartime Operating Limitations

IMAGINE, if you will, that this is the year 1827, and business makes it necessary for you to travel between the Virginia Seaboard and the Ohio Valley, a journey of approximately 400 miles.

You board a "shakeguts"—a springless, high-wheeled stage coach—and set out over the newly-opened James River and Kanawha Turnpike. Often, during the four-and-a-half-day journey across the 3600-foot high Allegheny mountains, you and your seven fellow passengers are compelled to get out of the coach and help the driver extricate horses and stage from a soft marshy patch or a deep pothole in the rough and rutted road.

Today, even under wartime driving limitations, you can make the same trip in around 18 hours, and you'll travel over a smooth, broad highway in a luxurious 32-passenger motor coach.

Since those pioneer days, some three million miles of public highways have replaced the rugged wilderness trails of early America, and traveling these modern roadways are 21,500 intercity motor buses which maintain daily schedules between the largest cities and the smallest hamlets. In the last three-and-a-quarter years, the nation's fleet of buses has annually carried more than one-half of all the persons transported by intercity public carriers.

Despite such wartime difficulties as acute shortages of replacement vehicles, repair parts, skilled manpower, and severe restrictions on the use of gasoline and tires, buses have more than doubled their passenger-miles since Pearl Harbor.

In one recent 12-month period, an estimated 692-million persons, nearly five and one-half times the population of the United States and 75 per cent more passengers than ever traveled in any peacetime year, rode in the nation's motor coaches. Most of this travel has been classified by the United States Department of Commerce as essential to the country's war effort, some 32.5 per cent representing urgent business or military travel, and 48 per cent being necessary civilian movement, with only 19.5 per cent attributable to pleasure or recreational travel.

Along with their stepped up highway travel job, intercity buses have been handed many special wartime assignments. Periodically, in all sections of the country, large fleets of motor coaches have been mobilized for emergency military movements. A majority of the military selectees have been transported from home towns to induction stations by bus. New schedules and new routes were quickly established to provide transportation for war workers from homes in defense housing projects to factory gates whenever the need arose.

The lack of sufficient new equipment with which to handle these varied assignments has caused the nation's bus operators to press into service hundreds of retired vehicles. Out-moded buses which in peacetime served only on weekends of heavy travel and were driven not more than 10,000 miles a year now are being operated 75,000 to 100,000 miles annually. By the close of 1944, approximately 4,000 intercity buses were reported to have seen over nine years of service, considerably more than the normal life expectancy of such vehicles.

To meet the urgent need for replacements, authorization has recently been given bus manufacturers to plan on the production of 3,500 intercity coaches during 1945. As part of this program, two automotive companies are cooperating to produce nine-ton, 37-passenger "parlor coaches." One, a peacetime builder of trucks and buses, makes the component parts. The other, a former passenger car manufacturer, assembles the big buses.

Huge Aluminum Stocks Used to Make Bombers

ENOUGH aluminum to supply every man, woman and child in the United States with at least two aluminum utensils has been consumed by an automotive company over a recently completed 32-month period. The aluminum was used in the production of heavy bombers for the Air Corps.

Of 133-million pounds of aluminum delivered to the plant in the period, 120-million pounds was in sheet form, for the fabrication of internal structures and outer surfaces, or "skins." Approximately six million pounds went into the manufacture of wire, rods, bars and rivets, of which there are 400,000 of the latter in each bomber. Tubing and extrusions accounted for the remaining seven million pounds.

More than 3,600 feet of tubes go into each heavy bomber, providing the vital arterial system for hydraulic fluids, gasoline, oxygen, vacuum and pressure pipes, speed indicators, engine oil, electrical conduits and ventilation.

Plants Help Workers Conserve Automobiles

Fully Equipped Garage Set-up by One Firm

To help employes keep their automobiles in tip-top shape, automotive companies have developed many unique wartime services. The newest aid is a fully equipped garage where motor cars may be serviced or repaired while employe-owners work on their war production jobs.

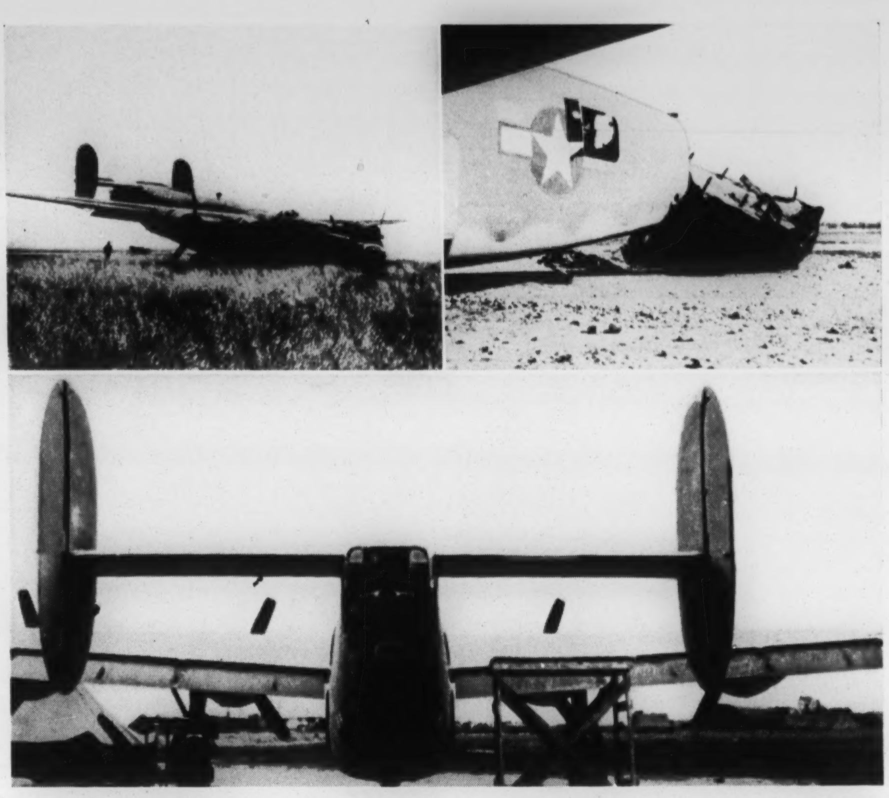
In addition to encouraging swap-ride programs and share-the-ride pools, companies have assigned parking lot inspectors to repair flats, put air in tires, and leave notes on motor cars with worn-out tires recommending that owners make application with the company transportation department for re-capping or new tires. Another successful conservation program was the distribution of a 64-page booklet instructing employes on the best methods for keeping automobiles in good operating condition.

Staffed by trained mechanics, two of whom are returned war veterans and are utilizing skills developed during military service, the automotive company garage is prepared to handle major or minor repairs on all the makes of cars that daily bring 20,000 workers to their jobs. The garage functions on a 20-hour basis to accommodate workers on two shifts, and during its first two months of operation an average of 40 cars a day were serviced.

Most frequent service request is for motor tune-up, including checking of carburetor, distributor, spark plugs and fuel pump. Next is brake repair and adjustment, followed by alignment of front wheels to reduce excessive tire wear. Other services requested are complete motor overhaul, tire repair, lubrication and the sale of Grade one tires, anti-freeze, batteries and sundry items.

As part of its facilities, the garage has available a towing service which operates within a limited radius of the plant. In addition, transportation is provided from the garage to the job for workers who leave their automobiles for servicing or repairing.

PICTURE CREDITS: Page 3—Acme, top, and U. S. Navy, bottom; Page 5—Fifteenth Air Force; Page 7—Signal Corps.



Top left: **Forced landing results in smashed nose for a B-24.** *Top right:* **Second ship comes home with tail shot up.** *Bottom:* **The undamaged sections of the two wrecked ships are salvaged and joined, putting one serviceable bomber back into the fight.**

Interchangeable Parts Enable Army Mechanics to Construct Airworthy Plane from Two Wrecks

Because of the principle of interchangeable parts, even the old mathematical formula that two minus two equals zero is being discarded by GIs when servicing and repairing combat equipment in this war.

Basic to the American assembly-line method of manufacture used in the automotive industry, parts interchangeability has paid handsome dividends on battle fronts throughout the world.

Wherever replacement parts are difficult or impossible to obtain, vehicles, planes and weapons are "cannibalized," meaning that parts are salvaged from badly-damaged equipment for future servicing needs.

Through the ingenuity of GI mechanics, one complete bomber, which never should have existed, was recently recreated from two wrecked Liberators. When the first bomber crashed on its home airport in Italy, 15th Air Force mechanics, after examining the shattered forward section, decided to leave the remains untouched and wait. Almost a month later a second B-24 flew in with its tail damaged beyond repair.

Aided by automotive wreckers and mobile machine shops, a crew of Yankee mechanics moved the tail of one plane and the nose and wings of the other across the huge airfield. The halves fitted snugly and the jigsaw Liberator flew back into combat.

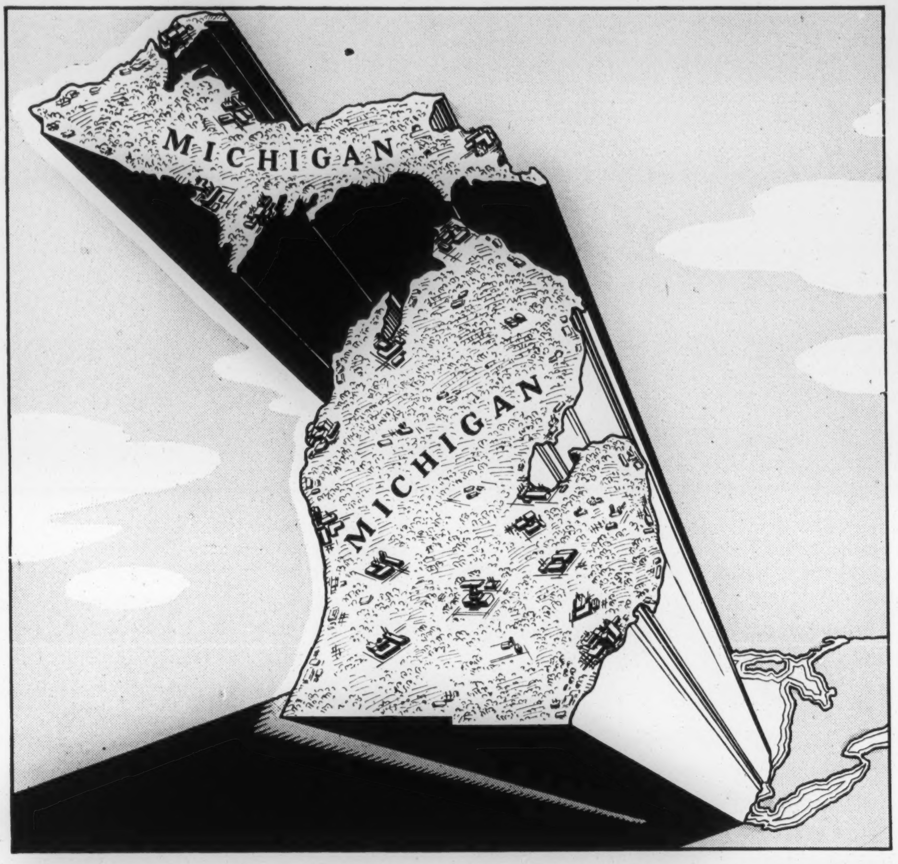
Anti-Mine Floor Developed for Army's Military Cars

No longer will enemy land mines present as serious a threat of injury to crews of light armored military cars as they once did. For, working in cooperation with the United States Army Ordnance Department, automotive engineers have developed an anti-mine floor which affords protection to both driver and assistant.

The new floor consists of five sections of fully heat-treated armor plate and is shaped to fit over the front axle housing. Tested under simulated battle conditions recently at the Army's Aberdeen Proving Ground, the floor bulged but remained intact when German-type mines were exploded beneath a vehicle equipped with the device.

THE AUTOMOTIVE STATES **NO. 7 OF A SERIES**

Motor Vehicle Production in Michigan Creates Jobs and Wealth in 43 States



WHATEVER its place or origin, the motor car you are driving represents the combined productive efforts of more than a million Americans.

Although Michigan played a major role in the mass-production drama which in peacetime made it possible for one American out of every five to own a motor vehicle, the supporting roles of 43 other states were of considerable importance.

As a famous automotive engineer once observed, "an automobile is nothing more than a crate of accumulated effort—the end product of many man-hours of work applied to it in the hundreds of communities through which it moved in its progress from mine and farm and forest to the end of some factory's assembly line and thence to the eventual user."

So, although most of the huge factories that have turned out 88,000,000 civilian motor vehicles since the turn of the century are concentrated in that small portion of Michigan which contains Detroit, Dearborn, Pontiac, Flint and Lansing, the lines of supply upon which these Michigan factories depend for raw materials, semi-finished and finished components reach into every corner of the continental United States and into many foreign countries. Similarly, when these Michigan factories gave the finishing touches to these "accumulations of effort" called motor vehicles and set them rolling toward their eventual owners the distribution was world-wide, and the sale and use of the product helped create more jobs to round out the production-consumption cycle.

Estimates have been made that half of every dollar spent for motor cars went into the far-flung supply-lines manned by miners, farmers, lumbermen, transportation and communication workers, factory and office employes in supporting manufacturing industries. The flow of accumulated man-hours in materials and parts to Michigan motor plants had no peacetime parallel anywhere, for the automotive industry of the United States was the world's largest purchaser of commodities produced by other industries.

From the ranchers in Texas came hides; miners in Minnesota's Mesabi range dug iron ore; cotton pickers on Mississippi's plantations and jute growers on Tennessee's small farms harvested the materials for fabrics.

In a typical production year the automotive industry was the largest consumer of at least a dozen important commodities, absorbing 80 per cent of all rubber goods, 73 per cent of the plate glass, 60 per cent of the alloy steel, 54 per cent of the malleable iron and 40 per cent of the mohair sold in the country.

Slightly over three years ago, Michigan's automobile plants turned out their last passenger cars for the duration, but the production pattern was enlarged and expanded to handle the great volume of war orders which flooded in on the state's motor plants. Since that date, the industry which turned out $3,700,000,000 worth of motor vehicles in its best pre-war year has devoted its resources exclusively to the production of tanks, shells, planes, military vehicles and over 300 other types of war equipment, valued at more than $9,300,000,000 in 1944.

By the close of last year Michigan's vast industrial facilities had delivered over $20,641,656,000 worth of military supplies to the armed forces.

Former automotive plants in Detroit are now manufacturing Navy antiaircraft guns, tanks and parts, military vehicles, dive bomber wings, Liberator bombers, B-29 components, engines for all branches of the service, heavy calibre shells, rockets, buzz bombs, helmets and a host of other vital products.

In Iron Mountain, an automotive company produces gliders; Flint manufactures machine guns, aircraft engines, tanks and tank destroyers, automatic pilots and bombsights for aircraft; Lansing makes shells, guns and aircraft propellers; Saginaw supplies guns, ammunition and aircraft parts; Grand Rapids makes helicopter subassemblies; Kalamazoo turns out amphibious tanks; Pontiac builds guns and parts, 155 mm. shells, tanks and Ducks, and many other Michigan cities and towns are engaged in turning out parts and subassemblies for prime contractors throughout the state and the nation.

A reconnaissance patrol in Germany reports its findings by radio-telephone.

Peacetime Research on 2-Way Communications By Motor and Radio Experts Pays Off in War

TO THE list of gradually vanishing occupations, prepare to add that of the army dispatch runner—considered to be one of the most hazardous battlefield jobs a soldier can draw.

Thanks to wartime advancements in two-way communication, mobile radiotelephone units now transmit and receive the majority of vital front-line military messages. Embodying developments worked out jointly by communication experts and automotive engineers, two-way radio apparatus permits Jeeps, Weasels, command cars, tanks and reconnaissance cars, as well as air and ground units to be in constant touch with one another.

Automotive engineers entered the radio development field during the thirties, when American motorists began to demand efficient automobile receiving sets, and when police departments broadened the use of radio squad cars in crime control.

The elimination of "electrical garbage," interference caused by coils, spark plugs and motion-induced static, was the chief problem posed in those days. Tackling the job, automotive engineers and radio technicians developed filtering devices which eliminated the objectionable noises, and which in turn proved to be the answers to the prayers of military communication experts.

One of the earliest large-scale military radio-telephone applications, utilizing such filtering devices, was in the now famous Jeep. Then, although the original intent had been to fit the Jeep solely for reception of radio messages, the automotive engineers carried the idea an important step beyond the military demand.

Built was a powerful light-weight generator, capable of being quantity-produced on the production and assembly lines used to manufacture automotive starters and ignitions. The new product, enabling the Army and Navy to equip internal combustion engines with high output generators, made it possible to carry on two-way radio communication over greater distances and for longer periods of time.

Subsequent military applications of this development in World War II has helped to cut down the frequency with which the time-honored dispatch runner is called upon to get messages from one front line fighting unit to another.

With its value to modern mechanized armies firmly established, two-way radio communication has also begun to perform an important civilian role. For example, a former automobile body factory now making aircraft parts has installed radio-telephones as an adjunct to its materials handling operations.

From a central panel in the huge plant, a woman dispatcher directs the operations of eight overhead cranes, eliminating the old system of hand signals, flasher lights and warning horns.

In transportation fields, several railroads have installed equipment which makes possible conversation between dispatch station and moving train, as well as from train to train.

Looking toward the postwar years, truck and bus operators are planning networks in which low-frequency radiotelephone units will keep drivers and dispatchers in constant communication within a 100-mile radius.

Motor Firms Cooperate In Brake Safety Drive

TO REDUCE accidents and help conserve the nation's dwindling stock of passenger cars, automotive companies and their dealer organizations have completed plans to cooperate in a nation-wide brake safety campaign sponsored by law enforcement agencies.

A recent survey shows that automobile registrations have dropped to 25-million from a peacetime mark of 29½-million, and passenger vehicles are currently leaving the road at an estimated rate of 2,500 daily.

Nearly twice as old, on an average, as they were in pre-war days, passenger cars continue to transport the bulk of workers to busy armament plants. Approximately 70 per cent of the employes of 191 typical war plants depend on private automobiles to reach their work, the survey reveals.

Running for six weeks beginning April 15, the national program calls for a brake check of passenger cars involved in accidents and traffic violations, as well as those operated in such a manner as to indicate equipment in poor repair.

As their part in the program, automobile dealers will accord brake servicing top priority during the period, outranked only by repair work which must be done on commercial vehicles needed in the war effort.

A brake check requiring one minute has been developed by automotive engineers as part of the drive. To make the check, a one-inch block of wood is placed under the brake pedal. If, when depressed, the pedal touches the block, equipment is probably defective.

March 1945

Planning and Operation of Line Production Is Similar to the Workings of a Cafeteria

THE COMMONPLACE cafeteria provides an example of the operation of line production, the method used by the automotive industry to make motor cars or military supplies in volume. At the cafeteria the tray moves from assembly station to assembly station, gathering food, so that when it reaches the end of the line it carries a complete meal.

Preparations for line production, as for getting food on the cafeteria table, are largely a matter of timing. Before the cafeteria can function, farmers must plant and harvest in proper season. Foods must be transported from farms to markets to outlets, and all components must be processed, prepared in the kitchen and finally brought to the various assembly stations.

In a like manner, demand must be calculated in advance before parts for automobiles can be produced by the line method. Manufacturing machines must be installed in proper sequence in the factory, raw materials and subassemblies must be ordered and must arrive in the plant at various precise moments, and workers must be on hand in sufficient numbers to man the production lines.

The terms mass and line production are frequently used as synonyms, but there is a distinct difference. Although both are high volume manufacturing methods, mass production may be obtained from one machine while line production is characterized by progressive layout of work. Examples of mass production are safety matches, produced at the rate of millions hourly; cigarettes, made at the rate of millions daily; tin cans, of which millions are made monthly; and motor vehicles, built in peacetime at the rate of millions annually. However, on this list, only automobiles exemplify both the mass and line production methods.

War Production News-Briefs

More than 30,500 engines for Liberator bombers and military cargo planes were turned out by a former motor car company last year.

Production of about 18,000,000 bearings monthly is needed to meet military and essential civilian requirements.

Approximately 2,000,000 American-made military vehicles are in use throughout the world, the War Production Board recently announced.

DID YOU KNOW?

Since 1940, one automotive firm has delivered more than 143,580,000 units of firepower to the armed forces. These include 140,000,000 shells and casings; 180,000 cannon; 1,000,000 machine guns, and 2,400,000 carbines.

* * *

To reveal porosity, slag and other hidden flaws in the armor plate, castings and weldments of tank and tank destroyers, an automotive company recently installed a 1,000,000 volt X-ray machine in its factory.

* * *

Eliminating hours of tedious hand riveting, a 500-ton fast traverse press is now being used by an automotive company to rivet fin bulkhead spars for heavy bombers. Handling two spars at once, the press requires 10 minutes to place, rivet and tack 270 rivets. By the old method, 50 minutes were needed.

* * *

More than 5,000 engine nacelles for Superfortresses have been delivered to the Army Air Forces by an automotive company since the beginning of the B-29 production program. Composed of over 3,000 parts, each nacelle weighs approximately one ton, is nearly 12 feet long and seven feet high. The company estimates that more man-hours of work are required to build one set of B-29 nacelles than to complete the ordinary fighter plane.

* * *

Designed to aid in the development of ship instruments and controls, a 60-foot ocean-going marine laboratory with a 1600-mile cruising range has been built for an automotive company. In addition to laboratory facilities, the ship houses a complete machine shop, enabling the company's engineers to re-design or re-build any device under test without returning it to the factory.

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NUTRITION - 1946

SERVING MANY

Merging INDUSTRIAL NUTRITION SERVICE

Food news for individuals and groups promoting nutrition education, and for food service managers in industrial plants, restaurants, hospitals and hotels.

Washington 25, D.C. **No. 18**

DECEMBER 1946

Katherine Johnson.

EAT A *BETTER* LUNCH !

Industrial Nutrition HIGHLIGHTS

For Editors of Plant Publications

Eat a Better Lunch!

The wartime admonition "eat a better lunch - do a better job" still holds as a sound approach to better living. A good meal with plenty of protein, vitamins, and minterals, means not only a better job on the assembly line, but extra vitality for off-shift hours as well. A good lunch helps combat that tired feeling, sharpens your wits, and contributes to a happier frame of mind. You'll be healthier, too, and less prone to accidents and sickness. So remember, to round out your day, eat these "square" meals!

To make certain that your cafeteria lunch is giving you your full quota of nutrients, check it with the Basic 7 food guide. Do you eat these foods every noon?

A protein-rich dish from Group 5.

Potatoes or other vegetable and fruit from Group 3.

A leafy, green, or yellow vegetable from Group 1.

Enriched or whole-grain bread from Group 6.

Butter or fortified margarine, Group 7.

Milk from Group 4 (or the equivalent of ½ pint of milk in cheese or ice cream).

A dessert made from foods in the list of "energy foods," and/or a fruit. If you eat these foods you have a well-balanced lunch.

Remember, too, that a "better breakfast" and a "nutritious dinner" are also needed every day. Check all your day's meals, then, with the Basic 7 food chart. In this way you'll be sure to get all the foods you need in the right amounts every day.

Why Groups I - II - III?

Leafy green vegetables included in Group I of the Basic 7, and citrus fruits, tomatoes, and cabbage in Group II, are among the foods richest in vitamin C. This vitamin helps to maintain body tissues, teeth, and gums in healthy condition. An adequate supply of vitamin C, known as ascorbic acid, prevents scurvy. Long ago, British naval doctors found that by adding fresh limes, lemons and oranges to the diets, seamen were cured of the dreaded scurvy which took a heavy toll during long voyages. For that reason the nickname "Limey" sticks with the British to this day.

Leafy, green, and yellow vegetables and tomatoes contain vitamin A in liberal amounts. This vitamin is necessary for healthy mucous membranes and normal body secretions. Vitamin A helps to fortify us against respiratory infections.

Potatoes and fruits and vegetables included in Group III contain varying amounts of minerals and vitamins, and supply needed calories.

Why Group IV?

Milk and its products are our best sources of calcium, so necessary for strong bones and sound teeth. Milk supplies riboflavin, one of the essential

B vitamins, and also good-quality protein. Every adult needs 1 pint of milk, or its equivalent in dairy products, every day.

Why Group V?

Meats, fish, poultry, eggs, cheese, and dried beans and peas are the protein-rich foods necessary for growth and body repair. These foods are excellent sources of thiamine (B_1), riboflavin (B_2), and niacin, which contribute toward steady nerves and normal body functioning. They also supply iron to help form the hemoglobin of the blood. During the war did you ever get turned down at the blood bank because your hemoglobin percentage was too low? You need good red blood to feel your best, so eat plenty of the Group V foods.

Why Group VI?

A question often asked by women workers is "must I eat bread?" The answer is "yes", at least one slice of enriched or whole-grain bread each meal, and if you are an active worker, you should eat two slices or more. Whole-grain and enriched cereals and flours supply valuable B vitamins, iron and other minerals, and some protein. They furnish the energy needed for work and play.

Why Group VII?

Eat some butter or fortified margarine with each meal because it tastes good, contains vitamin A, and supplies calories. Fats in meats and as spreads give a meal staying power and delay that empty feeling.

Write today for a copy of the new National Food Guide AIS-53, just off the press. This guide to good eating shows how to include the Basic 7 in your daily meals.

December Menu Tips

Meat promises to be more plentiful during December than it was during the early fall, thus offering a wider range of dishes for consumers' tables.

True, people are eating more meat these days, but the supply — in terms of choice cuts — may still be limited. It should be remembered, however, that beef stew, while lacking the glamour of beefsteak, is just as nutritious. And liver, though less enticing on a menu than "porterhouse," contains more vitamins and minerals. Furthermore, it's boneless. It's the meat and not the cut that counts most.

We should also bear in mind that Group 5, the "meat" group on the Basic 7 chart, also includes poultry, fish, eggs, and dried peas and beans. By using these meat alternates, you can add interesting variety to your diet, and still be well nourished.

To supplement your winter meat dishes, you'll find plenty of potatoes, onions, "iceberg" lettuce, and cauliflower available. Dried peaches, canned citrus fruit juices, and winter pears will also be abundant, and most market centers will have ample supplies of fresh and frozen fish.

Save the Fat!

Fat and oil shortages continue to restrict the output of soaps and thousands of other needed items. The need for used fats is as great now as it was during the war. You can help offset this shortage by continuing to save your used fats and turning them over to your butcher.

Food Service News

For Food Service Operators and Dietitians

Accent on Potatoes

Potatoes top the list of abundant foods this month. The 1946 crop has been the largest on record, thus permitting food service managers to offer potatoes regularly on cafeteria menus. The quality is high, too, with plenty of No. 1's available.

With fats, sugar, and some meats still in limited supply, food service establishments should plan to make good use of the big potato crop. They can also be used to conserve supplies of rice, wheat, and corn for shipment to famine-stricken areas of the world.

Potatoes should be served at least once a day, and to persons engaged in heavy work they should be served twice a day. They can be featured in many tasty and appetizing ways, and what's more, they're very nourishing. Potatoes are good sources of vitamin C and iron, and other nutrients, and furnish needed energy.

Choose Quality Potatoes

Wise buyers will familiarize themselves with the U. S. Potato grades, "Fancy," "Extra No. 1," "No. 1," and "No. 2" and decide upon the grades best suited to their use.

Size - the diameter at the thickest point at right angles to the long axis.

Maturity - a skin which is well-developed and will not loosen or roughen with ordinary handling.

Shape - well-shaped for the variety.

Brightness - potato skin which has a color normal to the variety and is free from dirt.

Injury or Damage - freedom from any defect that more than slightly affects the shipping quality or appearance. There is a permissible tolerance by weight of 6 percent on damage and injury on all grades except soft rot and watery breakdown, which is limited to 1 percent.

Try These, too

Early winter vegetables - onions, cauliflower, squash, "iceberg" lettuce, are also expected to be in plentiful supply throughout the United States during December.

The cranberry crop is larger by 20 percent than it was last year - thus assuring plenty of cranberry relish or sauce with Christmas turkeys. Winter pears, dried peaches, and canned citrus juices will be available for use in desserts and at the snack-bar.

Both fresh and frozen fish, except shell fish, will be abundant. The amount of fish put into cold storage this year was very large, so there should be plenty of fish fillets and steaks in all parts of the country.

Almonds and filberts were harvested in record amounts this fall and the prices of these nuts should be attractive.

Meats should be more freely obtainable in the early winter, but cafeteria managers may still need to "make the most of meats".

MENUS

For Special Lunches

Menus are given for complete lunches, which supply approximately 1,000 calories or one-third of the dietary allowance at the 3,000-calorie level, recommended by the National Research Council for the average worker per day.

Asterisks mark the foods in plentiful supply during December in most of the States. Footnotes indicate where the recipes may be found.

Corned beef hash with poached egg
Hearts of lettuce* with French dressing
Whole-wheat bread with butter or fortified margarine
Dried peach* Betty 1/
Milk

Boston baked beans with Vienna sausage
Cabbage slaw
Potato* rolls with butter or fortified margarine 2/
Lemon snow pudding with custard sauce
Milk

Shepherd's pie
Broccoli
Enriched bread with butter or fortified margarine
Ice cream
Beverage

Turkey* fricassee
Mashed potatoes*
Green beans
Cranberry relish 3/
Hot biscuits with butter or fortified margarine
Baked apple
Milk

Pan-fried haddock fillets with lemon
Parsley buttered potatoes*
Harvard beets
Corn bread with butter or fortified margarine
Dried fruit compote 4/
Milk

Open-faced cheese sandwich 5/
Baked squash
Head lettuce with Russian dressing
Applesauce cake
Beverage

Braised liver with onions*
Scalloped potatoes*
Tossed green salad with French dressing
Enriched bread with butter or fortified margarine
Ambrosia 6/
Beverage

Creamed eggs 7/
Baked potato*
Spinach or other greens
Carrot sticks
Hot gingerbread
Beverage

Veal stew with carrots and onions*
Steamed potato* in skin
Apple and cabbage slaw 8/
Corn muffins with butter or fortified margarine
Baked custard
Beverage

Escalloped fish*
Parsley buttered potato*
Braised celery and tomatoes 9/
Whole-wheat bread with butter or fortified margarine
Sweetpotato pie 10/
Milk

Hot turkey* sandwich
Mashed potatoes*
Buttered peas
Cranberry jelly
Sliced oranges with shredded cocoanut
Milk

Liver loaf with tomato sauce 11/
Lyonnaise potatoes*
Head lettuce* with chiffonade dressing 12/
Enriched bread with butter or fortified margarine
Apple crunch 13/
Milk

Clam chowder with crackers
Vegetable plate:
  Cauliflower au gratin
  Mashed Hubbard squash
  Tossed vegetable salad
Corn bread with butter or fortified margarine
Ice cream
Beverage

Christmas Special

Roast turkey* with savory dressing 14/
Mashed potatoes* with gravy
Buttered peas
Cranberry and orange relish
Enriched rolls with butter or fortified margarine
Mince pie with lattice top
Beverage

Turkey* hash
Baked potato*
Baked glazed onions* 15/
Carrot curls
Enriched bread with butter or fortified margarine
Chocolate layer cake
Beverage

Footnotes for Menus

1/ Recipe for Dried Peach Betty in this issue.

2/ Recipe for Potato Rolls in July issue of "Serving Many."

3/ Recipe for Cranberry and Apple Relish in November issue of "Serving Many."

4/ Recipe for Dried Fruit Compote in this issue.

5/ Recipe for Open-Faced Cheese Sandwich in this issue.

6/ Recipe for Ambrosia in May-June issue of "Serving Many."

7/ Recipe for Creamed Eggs in "Making the Most of Meats in Industrial Feeding," page 22.

8/ Recipe for Apple and Cabbage Slaw in this issue.

9/ Recipe for Braised Celery and Tomatoes in this issue.

10/ Recipe for Sweetpotato Pie in November issue of "Serving Many."

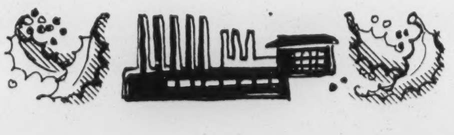
11/ Recipe for Liver Loaf in November issue of "Serving Many."

12/ Recipe for Chiffonade Dressing in May-June issue of "Serving Many."

13/ Recipe for Apple Crunch in September issue of "Serving Many."

14/ Recipe for Roast Turkey with Savory Dressing in November issue of "Serving Many."

15/ Recipe for Baked Glazed Onions in July issue of "Serving Many."



RECIPES

Dried Peach Betty

Ingredients	Amt. for 100 por.	Amt. for 500 por.
Bread, cubes or crumbs	6 lb.	30 lb.
Peaches, dried	15 lb.	75 lb.
Sugar, brown, or granulated sugar, and corn sirup	5 lb.	25 lb.
Nutmeg	1 tbsp.	1 oz.
Cinnamon	1 oz.	4 oz.
Liquid from soaked peaches plus hot water	2 qt.	2½ gal.
Lemon juice	1 cup	1 qt.
Butter or fortified margarine	1 lb.	5 lb.

Size of portion - 4 oz. (½ cup)

Method:

1. Soak peaches until plump in hot water or fruit juice to cover.
2. Combine the spices and sugar.
3. Line a greased baking pan with bread cubes or crumbs and cover with a layer of soaked peaches.
4. Sprinkle the spice and sugar mixture over the peaches.
5. Combine the lemon juice, butter, and hot liquid and pour half of this mixture over the peaches.
6. Repeat with alternate layers of ingredients to fill the baking pan.
7. Bake in a moderate oven at 350° F. for about 1 hour, or until the peaches are very tender.
8. Serve warm with custard sauce or thin cream.

Dried Fruit Compote

Ingredients	Amt. for 100 por.	Amt. for 500 por.
Dried peaches	5 lb.	25 lb.
Dried prunes	3 lb.	15 lb.
Dried pears or apricots	2 lb.	10 lb.
Hot water	to cover	to cover
Sugar or sirup	1½ lb.	7 lb.
Lemons, sliced thin	2	8

Size of portion - 4 oz. (½ cup)

Method:

1. Soak combined dried fruits in hot water to cover, until they are plump.
2. Heat fruit and liquid to boiling point and simmer until tender.
3. Add the thinly sliced lemons to the fruits about 30 minutes before the cooking is completed.
4. Stir the sirup or sugar into the cooked fruit 5 minutes before the end of the cooking period.
5. Chill and serve.

Open-Faced Cheese Sandwich

Ingredients	Amt. for 100 por.	Amt. for 500 por.
American Cheddar cheese, ground	10 lb.	50 lb.
Milk, scalded	1½ qt.	7 qt.
Mustard, dry	3 tbsp.	3/4 cup
Salt	1 oz.	5 oz.
Paprika	2 tbsp.	½ cup
Worcestershire sauce	3 tbsp.	3/4 cup
Bread, slices	100	500

Size of portion - 1 sandwich.

Method:

1. Grind the cheese in food chopper.
2. Mix salt, mustard, and paprika, and add to the ground cheese.
3. Add the scalded milk to the cheese mixture and blend to the consistency of creamed butter.
4. Add the Worcestershire sauce.
5. Spread the cheese paste on slices of bread.
6. Bake the open-faced sandwiches in a hot oven at 450°F. until a golden brown. Serve immediately.

Apple and Cabbage Slaw

Ingredients	Amt. for 100 por.	Amt. for 500 por.
Diced red apples	12 lb.	60 lb.
Chopped cabbage	6 lb.	30 lb.
Green pepper, minced	1 lb.	5 lb.
Lemon juice	1 cup	1 qt.
Cooked salad dressing	1 qt.	5 qt.
Lettuce or endive	6 heads	25 to 30 heads

Size of portion - 4 ounces (½ cup).

Method:

1. Mix coursely chopped cabbage with diced unpeeled red apples and minced green pepper.
2. Add lemon juice and toss together.
3. Marinate with cooked salad dressing thinned with evaporated milk or coffee cream.
4. Serve plain as a slaw, or on lettuce or endive leaves.

Braised Celery with Tomatoes

Ingredients	Amt. for 100 por.	Amt. for 500 por.
Celery cut in 1-inch lengths	10 lb.	50 lb.
Salt	2 oz.	10 oz.
Pepper	1 tsp.	1½ tbsp.
Tomatoes, canned or stewed	2 gal.	10 gal.
Onions, minced	1 lb.	5 lb.
Butter or fortified margarine	½ lb.	2½ lb.

Size of portion - 4 ounces (½ cup).

Method:

1. Prepare the celery and steam it until tender.
2. Melt the butter, add the minced onions and the drained celery and simmer until onions are tender.
3. Add the canned tomatoes and salt and pepper, heat to the simmering point.

Onion and Tomato Pie

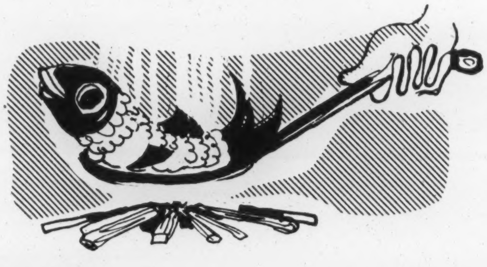
Ingredients	Amt. for 100 por.	Amt. for 500 por.
Tomatoes, skinned and sliced	32 lb.	160 lb.
Onions, peeled and sliced thin	8 lb.	40 lb.
Fat	1 lb.	5 lb.
Salt	2 oz.	10 oz.
Pepper	2 tsp.	2½ tbsp.
Bread crumbs, dry	4 lb.	20 lb.

Size of portion - 4 ounces.

Method:

1. Scald and skin tomatoes and cut into slices.
2. Prepare onions and slice fine.
3. Grease the baking pan and put in a layer of tomatoes and then a layer of onions. Sprinkle with salt and pepper.
4. Cover with a thick layer of buttered crumbs.
5. Repeat with alternating layers of ingredients, finishing with a layer of buttered crumbs.

6. Bake in moderate oven at 350° F. for 1 hour, or until the vegetables are tender and the crumbs browned.



Timely Recipes

How to Cook Fish. Fishery Leaflet 106. Free from the Fish and Wildlife Service, U. S. Department of Interior, Merchandise Mart Building, Chicago 54, Ill.

Operational TIPS

Food Cost Control

Commencing with this issue, this section for four consecutive issues will be devoted to the subject of food-cost control. The topics to be covered are:

1. December 1946 - Food-Cost Control is Good Business
2. January 1947 - Establishing Food Cost Control in Your Plant
3. February 1947 - Using Cost-Control Records to Give Essential Facts
4. March 1947 - Analyzing and Interpreting Financial Records and Reports

To the food service manager, a food cost control system is good business, for it points the way to bringing sales and cost ratios into line. A good system of food cost control includes two major activities: first, installing and keeping an adequate record system; second, controlling costs actively by managerial means. Records and profit and loss statements are valuable only to the extent that they are analyzed and used in active food service management.

Every manufacturing plant has an accounting department and uses a record system. However, the records kept in the general accounting department usually reflect the figures concerning the industry as a whole and seldom give the breakdown necessary for informed food-department management. The food service manager needs specific information on sales receipts and disbursements with which to supplement the records of the general accounting office. Such records help him to control costs intelligently in every division of the department.

Food-cost control records may be simple and should take relatively few hours to keep. They should be tailored to the needs of the establishment, the volume of business, and the size of the staff. They should give the necessary information that can be put into action, by the manager. Real food-cost control is through active management, and records and reports are the tools by which managerial action is directed.

Managerial Cost Control

Food service managers always strive to control their costs of operation but they do so most effectively when they are guided by key facts. Some of the means by which the manager may put food-cost control facts into action are:

Control of Raw Food

1. Control of menus - The menu plan should meet the need of the individual food service and be as limited in choice as possible to provide for the dietary needs and food tastes of the patrons. The menu items should be selected in accordance with market conditions making the best use of foods in plentiful supply.

2. Control by purchasing - Whether the food service manager buys directly or requisitions through the purchasing department, he should specify the quantity, quality, and kind of foods required.

Purchases should be made in accordance with rate of food use, delivery schedules, and storage conditions. It costs money to provide space for stored food and to inventory it. Do you carry in stock enough food and still have rapid stock turn-over?

Do you plan the food buying and schedule the time spent in purchasing it? Otherwise, you may be spending unnecessary managerial time that could be used to better advantage in supervision.

3. Control of food waste:

Pre-preparation - This involves control of the preparation of products for cooking and usually entails training employees in the operation of kitchen machinery and in methods of work. For instance, what percentage of waste do you have regularly in paring potatoes? How much of this is due to inefficient operation of the potato-paring machine?

Cooking - Food waste also may occur during cooking. For example, is your cook informed about low temperature meat cookery? Does he practice it and therefore obtain more servings of meat per pound of higher nutritive value?

Serving - Every good food service manager knows the estimated portion yield of a recipe. The test in food costs is, how many portions are actually served? How many portions are left over? What happens to the unsold food?

4. Control of labor cost - The efficient use of man-hours is a better way to control labor costs than a low wage scale. Careful scheduling of workers, training for the job, and adequate supervision are essential to controlled labor costs. If the profit-and-loss statement shows that the percentage labor cost is too high, do you put that information into action by trying to make more efficient use of labor man-hours? In a well-managed food service department the work load is planned, the operations are mechanized as far as possible, and the workers are trained in what to do, how to do it, and why it is important.

5. Control of Other Operating Costs

Although raw food cost and salaries and wages comprise the largest percentage of expense in a food service operation, other operating costs are important. Utilities, cleaning supplies, operating supplies, depreciation, repair and replacement, and miscellaneous expenses are included in these "other operating costs." These costs may be kept as low as possible when the cleaning staff and maintenance crews are taught to use the proper equipment and methods, when the machines are maintained at maximum efficiency, when the working surfaces, floors, walls, and equipment are kept clean. Do you, as the manager, apply recent scientific knowledge in selecting supplies and in teaching methods of sanitation and maintenance? Do you employ the assistance of maintenance experts?

Your food cost control records, your interpretation of these records, and your ability to put the findings into action are necessary to an effective food cost control system. The manager needs facts and figures for effective action.

In the January 1947 issue of Serving Many the subject of establishing a food cost system will be discussed.

Slide Films Available

"Our Health in Your Hands," a slide, film series recently released by the United States Public Health Service, will be found helpful for training your food service workers in sanitation practices. Four subjects:

"Germs Take Pot Luck" - showing how germs cause disease, how diseases may be spread - particularly in restaurants, - and how restaurant employees can do their part toward protecting the health of the Nation by following correct sanitation practices. (76 frames)

"Service with a Smile" - illustrating in photograph and narrative the need for attention to personal health, ways to keep well, and safe, clean practices in serving food. (63 frames)

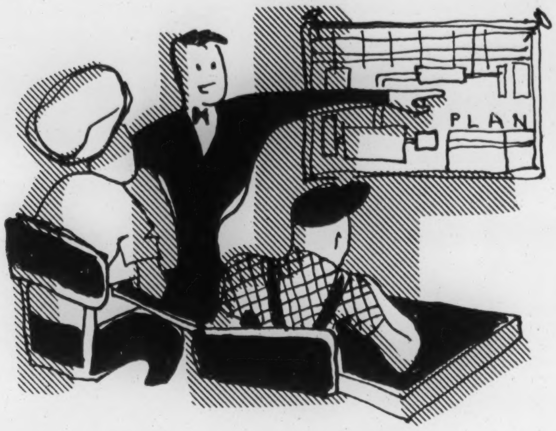
"In Hot Water" - the correct way to wash dishes, handle, and store them. Hand dishwashing is shown step by step. A briefer sequence shows the operation of a single tank dishwashing machine. (75 frames)

"Safe Food for Good Health" - recommendations as to safe buying, safe preparation, safe serving of food, and how to protect it from contamination. (81 frames)

The complete series consists of 4 film strips and two double-faced 16-inch, 33 1/3 r.p.m. recordings. Each runs from 10 to 15 minutes.

Copies of the series have been made available to all State health departments and Public Health Service district offices, and may be purchased from Castle Films, Inc., 30 Rockefeller Plaza, New York, N.Y. The price of the complete series is $10.00 less 10 percent discount to schools and other nonprofit institutions.

What's New in FACILITIES



A Popular Cafeteria

From the number of requests for the U. S. Department of Agriculture's food service plans, the medium-sized cafeteria, seating 200 persons per lunch period, appears to be the most popular lay-out. Statistics show that the majority of plants are medium in size, so the demand for this plan is understandable. It meets a real need in industry.

A study of the lay-out (see page 12) will quickly justify the popularity of this cafeteria. Its design meets all the specifications of a first-class production unit, with the end product nourishing, well-prepared meals instead of, say, cars or refrigerators.

The whole play is designed around a basic menu pattern appropriate , to moderate and heavy activity as well as to the known meal load. The menu would consist of 1 soup, 2 or 3 entrees, 3 vegetables, 2 salads, 2 desserts, 2 fruits (juices or fresh in season),bread, milk, tea, and coffee.

The best "food production flow" principles are incorporated in the kitchen lay-out. Supplies are stored immediately upon delivery without traversing the kitchen. The supplies move in a continuous line, through preparation and serving, without cross traffic or backing up. This is the goal in planning production areas in manufacturing plants.

The manager's office is located to provide visual and physical control over the entire operation. Food handling requires close supervision of purchasing, delivery, storage, checking out, preparation ,and serving to insure a well-run, economical operation. The office location is further improved by its direct connection with the dining room. This always may not be feasible, but it is well worth an effort to obtain close access to the dining room.

The location of the salad and sandwich department adjacent to supply and reach-through refrigerators is another ideal feature of the plan. Extra steps are eliminated because finished salads can be placed under refrigeration immediately and the reach-through feature of the boxes puts the salads a step away from the serving counter.

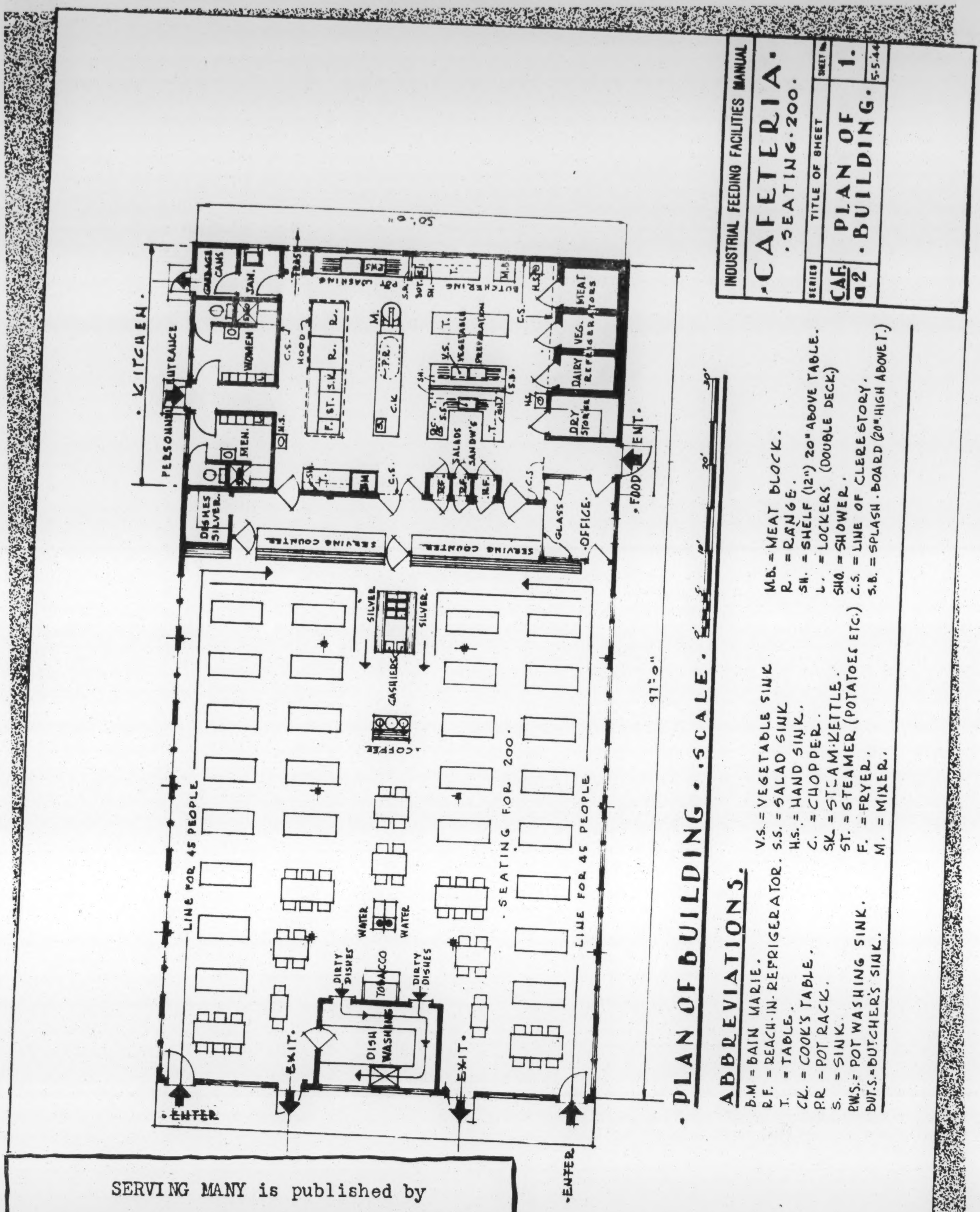
Toilet and locker rooms have been provided for both male and female employees, and have been kept away from food storage or preparation units. The janitor's room, with garbage and trash spaces adjacent, is also removed from food handling, comforming to sanitary recommendations.

No bakery unit has been provided since smaller cafeterias usually find it more efficient to purchase most baked products from commercial bakeries.

The dining room, seating 200 persons at one time,requires two staggered lunch periods to feed a total of 400 people (the peak meal load of the kitchen).

The dining room may, of course, be reduced in size if fewer people - say a total of 200 - are to be fed, or if the number of staggered lunch periods is increased. In either case the size of the kitchen would remain the same.

A separate pamphlet for the 200-size cafeteria, giving an equipment list and the plan, is available on request. Cafeteria plans are also available for facilities with a meal load of from 50 to 100, 100 to 200, 400 to 800, and 800 to 1,300.


INDUSTRIAL FEEDING FACILITIES MANUAL
·CAFETERIA·
·SEATING·200.
SERIES
CAF. a2
TITLE OF SHEET
PLAN OF ·BUILDING·
SHEET No.
1.
5.5.44
·PLAN OF BUILDING· ·SCALE·
0 5 10 20 30
ABBREVIATIONS.
B.M. = BAIN MARIE.
R.F. = REACH-IN-REFRIGERATOR.
T. = TABLE.
CK. = COOK'S TABLE.
P.R. = POT RACK.
S. = SINK.
P.W.S. = POT WASHING SINK.
BUT.S. = BUTCHER'S SINK.
V.S. = VEGETABLE SINK
S.S. = SALAD SINK
H.S. = HAND SINK.
C. = CHOPPER.
SK. = STEAM-KETTLE.
ST. = STEAMER (POTATOES ETC.)
F. = FRYER.
M. = MIXER.
M.B. = MEAT BLOCK.
R. = RANGE.
SH. = SHELF (12") 20" ABOVE TABLE.
L. = LOCKERS (DOUBLE DECK)
SHO. = SHOWER.
C.S. = LINE OF CLERESTORY.
S.B. = SPLASH·BOARD (20" HIGH ABOVE T.)
50'-0"
97'-0"
·KITCHEN·
PERSONNEL ENTRANCE
GARBAGE CANS
JAN.
TRASH
WOMEN
MEN
POT WASHING
BUTCHERING
M.B.
MEAT
VEG.
DAIRY
REFRIGERATORS
DRY STORAGE
·FOOD ENT.
HOOD
R.
F.
ST.
S.K.
P.R.
C.K.
M.
VEGETABLE PREPARATION
V.S.
SALAD SANDW'S
S.S.
T.
S.B.
H.S.
B.M.
R.F.
C.S.
DISHES SILVER.
SERVING COUNTER
SERVING COUNTER
GLASS
·OFFICE·
SILVER
SILVER
CASHIERS
·COFFEE
·SEATING FOR 200·
LINE FOR 45 PEOPLE
LINE FOR 45 PEOPLE
WATER
WATER
DIRTY DISHES
TOBACCO
DIRTY DISHES
DISH WASHING
EXIT.
EXIT.
·ENTER
·ENTER

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UNITED STATES DEPARTMENT OF AGRICULTURE
Production and Marketing Administration
Food Distribution Programs Branch
WASHINGTON 25, D. C.

GROCERY FACTS *from* GROCERY MANUFACTURERS OF AMERICA, INC.
205 EAST 42ND STREET • NEW YORK 17, NEW YORK

The Life Line of America

THE LINE OF ESSENTIAL PROCESSES BETWEEN FOOD IN THE FIELD AND FOOD ON THE TABLE

NOV 18 1946
DEPARTMENT OF LABOR

● **For further information refer to**
FLANLEY AND WOODWARD
551 Fifth Avenue, New York 17, N.Y.

Bulletin No. 3
November 13, 1946

Robinson

The Food Situation Today

"When women can't run their kitchens well, they want to know why," said Paul S. Willis, President of the Grocery Manufacturers of America, Inc. "Women write to us that they want more facts about the food situations and we are going to try to supply them."

This bulletin contains two sections:

1. a report on supply and demand;
2. an outline for discussions or programs.

Mr. Willis' estimate of the food situation as of this date is as follows:

SUPPLY

In most cases, the supply picture is good. American farmers are now harvesting the largest quantities of food grains in history. 1946 crop volume is 2 per cent over the previous peak of 1942 and 26 per cent higher than the 1923-32 average. Corn crop is estimated at 3,371,707,000 bushels, 353,297,000 bushels greater than the 1945 crop. The 1946 wheat crop amounts to 1,167,319,000 bushels which is 44 million bushels greater than the 1945 crop.

There is a record-breaking pack of 425,000,000 cases of canned fruits and vegetables now on the way to market. This pack is 9 per cent higher than the prewar peak reached in 1941-42 and 407 million cases will be available for domestic consumption.

When broken down into commodity groups, the supply picture is this:

MEAT

Enough for all once pipe lines are filled. Production of meat animals 5 per cent below 1945 but 38 per cent above 1938-39 average. There are about 52 million head of beef cattle on hoof now. Meat production in 1947 will be as large as this year and purchases for export and military use will be smaller. The probable supply about 145 pounds per capita as compared with consumption of 140-145 pounds last year and the 1935-39 average of 125.6 pounds. Canned meat products will be in fairly good supply.

VEGETABLES

Included in the record-breaking pack of canned fruits and vegetables are 130,800,000 cases of seasonal vegetables and 112,400,000 cases of non-seasonal vegetables. All varieties in good supply. An increased consumer pack of quick-frozen vegetables is predicted.

SUGAR

Sugar rations based on 73 pounds per person per year as against pre-war consumption of 98 pounds. U. S. supplies are governed by world-wide allocation system, may increase by a small degree in second half of 1947. Current extreme scarcity in the East were aggravated by maritime and trucking strikes; all supplies to retail stores and to manufacturing plants cut off pending settlement.

FRUITS

Record breaking pack of 53,600,000 cases of canned fruits will be in market shortly.

DESSERTS

Shortages of prepared puddings, gelatine, and baked goods will probably continue as a result of the sugar situation. The removal of price controls means increased production once sugar is available. Cake flours are back on market following elimination of the wheat extraction order. Decontrol of prepared flour mixes will increase supply although manufacturers are handicapped by lack of shortenings.

GRAIN PRODUCTS

Deducting famine relief commitments from the bumper crops of grain still leaves plenty for domestic production of flour, hot and cold cereals, spaghetti products, corn syrup, and hundreds of processed foods made from food grains. Enough flour means enough bread. U. S. crop of rice is good but world supplies are poor; domestic supplies depend upon exports, will probably be below demand.

POULTRY AND EGGS

With meat back on the market and a subsequent lessened demand for chicken, turkey and eggs, supplies should be able to meet demand. There are more feed grains available which means more poultry, more eggs. Supplies in 1947 about same as in 1946; somewhat fewer eggs but supply in balance with demand as result of higher prices. Slightly less chicken but more turkey.

CANNED SOUP, JUICES

Production of canned soups is good (33 million cases in the 1946-47 pack as compared with 29,500,000 cases in 1939) but demand for such products during meat shortages and halting of deliveries by truck strike in New York has created a short supply. Canned orange, grapefruit, and blended juices are plentiful. There are good supplies of tomato juice, pineapple juice and vegetable juice. 1946-47 pack of fruit and vegetable juices is 101,400,000 cases as against 40,800,000 cases in 1938-39.

BABY FOOD

Supplies are good, sufficient to meet all requirements. 1946-47 pack is 14,000,000 cases--1936-40 average was 2 million cases a year.

CANNED FISH

Current scarcity of canned fish created by abnormal demand during meat shortage and by strikes. This year's pack may reach 600 million pounds which is 7 per cent below 1945 pack but non-civilian needs are much reduced from last year. Processing of frozen fish will continue upward trend; stocks in storage September 1 at record level. 1947 pack expected to be larger.

SOAP PRODUCTS

Extreme scarcities are due primarily to the over-all shortage of fats and oils, and loss of tallow resulting from black market slaughtering during meat price control. Potential supply is below current demand and most soap products will continue in short supply until supplies of raw materials improve. However, eventual elimination of all government controls and an increase in amount of tallow available to manufacturers should eliminate extreme scarcities.

DAIRY PRODUCTS

Civilian supply of milk and other dairy products in 1947 is expected to be about 800 pounds per capita as against 813 pounds in 1946. The potential supply of milk is equal to demand under normal marketing conditions with 1947 production estimated at 118 billion pounds. Recent shortages in New York City were caused by the truck strike which cut supplies of paper containers. Strikes last spring cut production of glass containers. Supply of cheese in 1947 will be greater than in 1946. With price controls off once and for all, butter supplies will improve but there will be only 11 pounds per person next year as compared with pre-war consumption of 16 pounds.

BEVERAGES

Coffee, an import, is in somewhat short supply compared with pre-war receipts because of maritime strikes and government manipulation but is available in most food stores now and should continue to be available. High pre-war surpluses no longer exist but supply is expected to practically meet demand. Total coffee imports for period Oct. 1, 1945 to Aug. 31, 1946 were 18,904,144 bags, 833 thousand bags less than received in the corresponding period in 1944-1945. There is enough tea to meet the U. S. demands and enough beer on the market with government grain restrictions eased. Sugar supply prevents all-out production of soft drinks but reasonable demands can be met by trade.

DEMAND

The demand for food products will continue high in 1947 in line with increased consumer income. Disposable income, which was 67.7 billion dollars in 1939, has risen to 140 billion dollars and consumers appear to be spending slightly more of their disposable income for food then was spent in 1939. Although the re-appearance of many household products is expected to attract some of the money now spent for food, demand will probably continue pretty much in line with income. Further indication of demand is the steady rise of average hourly earnings in all manufacturing plants from $1.00 in January to $1.09 in July.

SPECIAL FOR LEADERS

responsible for discussions and programs on the food situation:

For study groups or organizations planning programs designed to provide a better understanding of the food situation, the leader makes the following statement to introduce stimulating and valuable discussion:

> With the decontrol of food and grocery products (with the exception of sugar, rice and syrup), we can expect the gradual return of normal supplies. Manufacturers are as anxious as anyone to make plans for maximum production. There are important factors to be considered however, that will have influence on the speed of the return.
>
> Chairmen may assign each of the following "factors" to a member to lead the discussion.

1. insufficient supplies of raw materials
2. labor problems and strikes all along the line of essential processes that make up the Life Line of America, such as maritime and trucking.
3. artificial scarcities caused by unusual demands on the part of homemakers for food they have lacked for some time
4. lack of balance in supply and demand which prevents competition which controls prices as in a free market
5. specific suggestions which the women can follow to stop frenzied buying and help spread truth about the food situation.

Note: Public libraries, newspapers, news magazines and other information centers will have additional current data to be used as background material for discussion leaders.

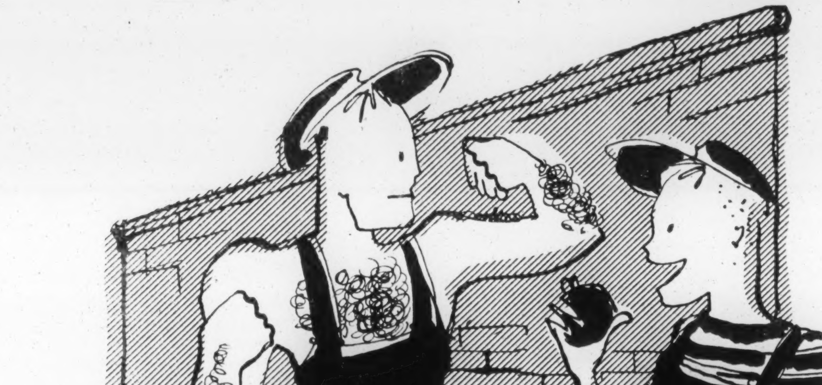
SERVING MANY

Merging INDUSTRIAL NUTRITION SERVICE

Food news for individuals and groups promoting nutrition education, and for food service managers in industrial plants, restaurants, hospitals and hotels.

Washington 25, D.C. **No. 16**

OCTOBER 1946



HAD THAT 'TWEEN-MEAL *Snack?*

ATTENTION!

PLANT MANAGERS AND FOOD SERVICE MANAGERS

Do you need help with an industrial feeding problem? If so, fill out and return the form below. Our Industrial Feeding Staff will send helpful materials.

---

1. Check items which fit your need:

_____Planning new facilities

_____Redesigning old facilities

_____Menus and recipes

_____Food preparation and storage

_____Training food service workers

_____Food selection programs for workers

2. Fill in this brief questionnaire:

We will serve ____workers and our food service will consist of:

_____Cafeteria

_____Lunchroom

_____Canteen

_____Lunch Counter

3. Send this form to:

UNITED STATES DEPARTMENT OF AGRICULTURE
Production and Marketing Administration
Food Distribution Programs Branch
Washington 25, D. C.

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CARTOONS BY KAY JOHNSON

Industrial Nutrition HIGHLIGHTS

For Editors of Plant Publications

Accent on Snacks!

For that 'tween-shift lift, there's nothing to compare with a good, nourishing snack. This has definitely been established in many industrial plants where snack facilities are available to workers during rest periods. A snack gives you not only the extra "steam" needed to carry on to the regular break in the shift, but boosts your spirit, maintains your good humor, and heightens interest in your work. You raise your stock as an employee, too, because your efficiency is higher, and you're less inclined to suffer accidents.

That's a big pay-off for what seemingly is a small item, but there's no doubt about the results. Snacks, then, deserve more emphasis than is commonly given to them.

To be most effective, snacks must be made of appetizing, nourishing foods. They must definitely supplement your diet. Experiments have shown that foods that contain protein and fats along with starch and sugar sustain energy longer. Milk comes nearer than most foods to meeting these requirements, and is therefore recommended as an important snack item. Milk contains protein, fat, and milk sugar, and in addition, provides valuable calcium and vitamin B2 (riboflavin).

Other foods for between-meal eating that both taste good and provide needed nutrients and energy are:

Buttermilk - Milk shakes, and other milk drinks.

Citrus fruits and juices - Oranges, tangerines, grapefruit, and fresh and canned citrus juices.

Tomatoes - Whole fresh tomatoes, tomato salad, tomato juice, or cream of tomato soup.

Fresh vegetables in season - Celery hearts, carrot sticks, cauliflower, green pepper strips, turnip slices, cucumbers, and fresh tomatoes. Stuff the celery with cream cheese, cottage cheese, processed cheese, or peanut butter for extra flavor and nutriment.

Breadstuffs - Sandwiches, made with enriched or whole-grain breads, peanut-butter-filled crackers, rye wafers, cornsticks.

Sweets - Gingerbread with apple sauce, (or served with cream cheese or cottage cheese), ginger snaps, molasses cup cakes with raisins, oatmeal cookies, sponge cake, baked custard, fruit puddings. These dessert snacks contain valuable nutrients as well as energy and may be made with very little sugar and fat.

Abundant Foods in October

Canned citrus fruit juices will be in abundance on your grocer's shelves in October. Grapefruit juice, orange juice, and blended orange and grapefruit juices are delicious when served thoroughly chilled. These citrus juices also contain liberal amounts of vitamin C, so drink a glass for breakfast, as a between-meal refreshment, or before bedtime.

Fresh apples will be plentiful in most parts of the country. They may be used with meats, in fruit salads, for dessert, and in countless other ways. Tuck a crisp, juicy Spitzenburg, a red MacIntosh, or a mellow Grimes Golden in your lunch box for a between-meal snack.

Late white potatoes and fall onions will be abundant everywhere. To serve potatoes at least once a day is a good dietary rule. Potatoes, served twice a day are relished by active workers, and men engaged in heavy work can eat them to advantage three times a day. If you are overweight, remember that it's the gravy and the butter over the potatoes that are fattening, and not the potatoes themselves. Potatoes steamed in their jackets and served at once lose less of their mineral and vitamin content than potatoes cooked in other ways.

Victory gardeners in most States should be reaping full harvests of green snap beans, butter beans, broccoli, cabbage, carrots, green peppers, tomatoes, and other late maturing vegetables during October.

October is a good month for a "Home Garden Harvest" display at the plant to show your skill as a gardener. October also is the time to can and freeze the foods you can't eat fresh from your garden. The September issue of Serving Many" listed several excellent Government publications on canning and freezing which are available to you on request.

storage eggs are plentiful

Eggs. Large numbers were put into storage and into freezers last spring. From September through December storage eggs and frozen eggs are expected to be available in liberal quantities.

If you haven't tried good quality storage eggs and frozen eggs for cooking and baking, this fall will be a good time to use them in your plant.

Eggs are shelled and frozen whole, or are separated into yolks and whites and frozen. If you have facilities for holding frozen eggs at 0° F. or lower, or can arrange for daily deliveries, you'll find them a time-saving and thoroughly satisfactory product. Be sure that you adjust your recipes to use frozen eggs by weight or measure, and not by count.

Fish, fresh and frozen. Both fresh and frozen fish are expected to be in plentiful supply this month. Larger supplies of meat have lessened the demand for fish somewhat and adequate supplies of your patrons' favorite varieties should be available from your dealer.

Vegetables and fruits. Abundant supplies of late white potatoes, onions, lemons, honeydew melons, and local garden vegetables will be available in October in most market centers. Tinned vegetables, especially tomatoes, will be limited in supply, so use fresh products on your menu whenever possible.

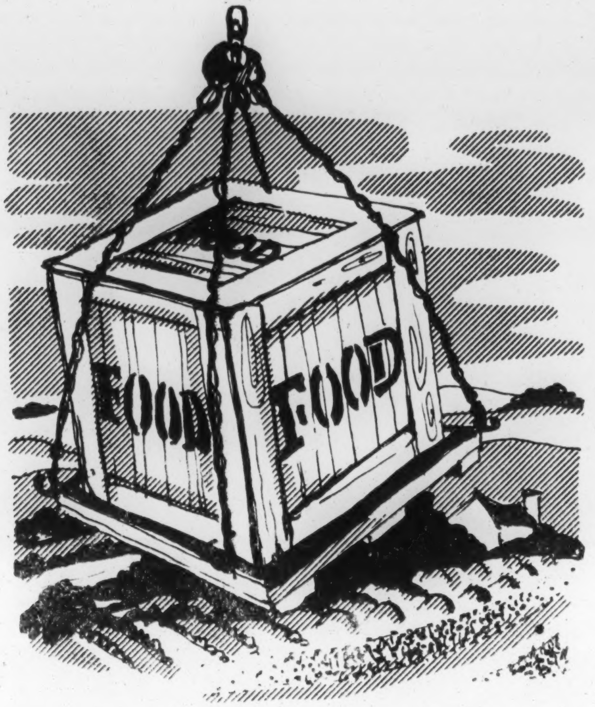
Yes, We Have no Bananas

If you have difficulty in obtaining as many bananas as your customers want, it's the result of war shipping restrictions on South and Central America banana production. In 1945 the United States imported 40 million bunches of bananas. This appears to be a large number of bunches, until we learn that in pre-war years an average of 55 million bunches a year was imported. The Nation's population was smaller then, too.

Do you know that bananas were found by Alexander the Great in the Indus Valley in 327 B.C.? He imported them into Europe for the first time. Since then, the appetite for bananas has become international, and so large that from 1934 to 1938 world exports of bananas averaged 107 million bunches each year. Note that North Americans ate almost one-half of the world supply.

Food Service News

For Food Service Operators and Dietitians



The Food Supply Picture

Larger food crops are expected in the United States andin most other countries during 1946-47. The increase, however, will be offset by smaller supplies of food on hand, particularly of fats,oils, sugar, and grains. Food service managers as well as housewives still will need to cooperate with the President's Famine Emergency Program in order to help make these scarce foods go round.

Here are some important facts on major world food commodities:

Wheat -The world wheat crop is greater than last year, but carry-over stocks of wheat and wheat products are very low.

Rice and rye - The world rye crop is less than in prewar years. This is also true of the rice crop. Many persons in the Far East are expected to die of starvation before the fall rice crop can be harvested. Transportation in many areas still is lacking, or is disrupted, thus making movement of food supplies difficult.

Sugar - Our production of sugar in 1946-47 is expected to be greater by one-fourth than it was in 1945. However, the world demand for sugar is expected to be greater than the supply even with increased Cuban and Philippine production.

Fats and oils - The production of edible fats and oils will continue to be far below world requirements.

Meats, dairy products, and eggs - Restricted supplies of feed for livestock this year will probably affect the world supply of these products in 1946-47, although the bumper grain crop in the United States this fall may ease the situation here somewhat.

The Price Picture

The Bureau of Labor Statistics index of wholesale prices advanced to 113 in June (1926 100). This brings the index to about 54 percent above that in 1935-39. In the first 6 months of 1946 the wholesale price index advanced 5 percent, and in July 6 percent.

Under the provisions made by the Congress in the new OPA act, beginning with September 1 no maximum price is applicable to any agricultural commodity unless the Secretary of Agriculture certifies the commodity as being in short supply.

The first list of commodities in short supply was certified on September 1, 1946. On the first of each succeeding month the Secretary must certify as to the commodities to be added to or removed from this list. The Department of Agriculture therefore has assumed increased responsibilities regarding the price control of foods and other agricultural commodities.

MENUS

For Special Lunches

The menus given below suggest the use of foods in seasonable abundant supply. Asterisks indicate foods abundant in national supply. Footnote numbers refer to the place where a recipe for the food may be found.

Beef à la mode 1/
Oven-browned potatoes*
Harvard beets
Whole wheat biscuits with butter or fortified margarine
Apple* crunch 2/
Milk

Scalloped ham and eggs
Buttered carrot strips
Snap beans
Potato* rolls with butter or fortified margarine 3/
Baked Indian pudding 4/
Beverage

Broiled hamburgers
Smothered onions*
Tossed green salad
Enriched bun with butter or fortified margarine
Apple sauce*
Oatmeal square 5/
Milk

Cold baked ham with hot potato* salad 6/
Cole slaw
Corn bread with butter or fortified margarine
Lemon* meringue pie
Milk

Scalloped fish au gratin
Paprika potatoes*
Greens
Enriched roll with butter or fortified margarine
Warm gingerbread
Beverage

Smoked sausage link
Creamed potatoes*
Apple* rings
Cabbage, carrot, and celery salad
Whole wheat bread with butter of fortified margarine
Fruit gelatin
Beverage

Braised chicken 7/
Mashed potatoes*
Green peas
Hot biscuits with butter or fortified margarine
Honeydew* melon with lemon*
Milk

Corned beef hash 8/
Sliced pickled beets
Green salad with chiffonade dressing 9/
Oatmeal muffin with butter or fortified margarine
Baked apple*
Milk

"Appledore" soup 10/
Cheese omelet
Buttered green peas and diced carrots
Rye bread with butter or fortified margarine
Queen of puddings 11/ Beverage

Baked fillet of flounder* in milk 12/
Parsley buttered potatoes*
Onion* and tomato pie
Corn muffin with butter or fortified margarine 13/
Ambrosia 14/
Milk

Meat loaf with onion* sauce 15/
Mashed potatoes*
Scalloped egg plant 16/
Enriched roll with butter or fortified margarine
Lemon* milk sherbet
Beverage

Fish chowder* 17/
Salad plate:
  Cottage cheese
  Sliced tomatoes
  Cabbage and green pepper salad
  Carrot sticks
Whole wheat bread with butter or fortified margarine
Deep dish apple* pie 18/
Beverage

Braised liver
Creamed potatoes*
Lima beans with yellow corn
Enriched hard roll with butter or fortified margarine
Fresh honeydew melon*, apple* and pineapple cup
Beverage

Fresh ham steak with milk gravy
Mashed potatoes*
Green snap beans
Hot biscuit with butter or fortified margarine
Lemon* snow pudding with custard sauce
Beverage

Egg cutlet with cream sauce 19/
Steamed potato* in skin
Mexican slaw
Rye bread with butter or fortified margarine
Applesauce* cake 20/
Milk

Footnotes to Menus

1/ See recipe for Beef à la mode in "Making the Most of Meats in Industrial Feeding," page 15.

2/ See recipe for Apple Crunch in September 1946 "Serving Many."

3/ See recipe for Potato Rolls in July 1946 "Serving Many."

4/ Recipe for Baked Indian Pudding may be found on page 5 of "Saving Sugar in Industrial Feeding."

5/ See recipe for Oatmeal Squares in February 1946 "Serving Many."

6/ See recipe for Hot Potato Salad in August issue of "Serving Many."

7/ See recipe for Braised Chicken in "Making the Most of Meats in Industrial Feeding," page 24.

8/ Recipe for Corned Beef Hash is in "Making the Most of Meats in Industrial Feeding," page 10.

9/ See recipe for Chiffonade Dressing in May-June issue of "Serving Many."

10/ See recipe for "Appledore" Soup on page 8 of this issue.

11/ See recipe for Queen of Puddings in July issue of "Serving Many".

12/ Recipe may be found on page 9 of this issue.

13/ See recipe for Corn Muffins in April issue of "Serving Many."

14/ See recipe for Ambrosia in May-June issue of "Serving Many."

15/ See recipe for Meat Loaf with Rolled Oats in May-June issue of "Serving Many."

16/ See recipe for Scalloped Eggplant in September issue of "Serving Many."

17/ Recipe may be found on page 8 of this issue.

18/ Recipe may be found on page 9 of this issue.

19/ See recipe for Egg Cutlets in March issue of "Serving Many."

20/ Recipe may be found on page 9 of this issue.

RECIPES

The recipes given suggest ways of using fall apples, white potatoes, and onions which are expected to be abundant in October. Recipes for fish chowder and "appledore" soup utilize abundant foods. They are presented this month as a contribution to National Soup Week, which will be featured in press and on the radio from October 7 to 13, 1946, under the sponsorship of the National Restaurant Association.

"Appledore" Soup

Ingredients	Amt. for 100 Por.	Amt. for 500 Por
Potatoes, pared and thinly sliced	12 Lbs. (raw wt.)	60 Lbs. (raw wt.)
Celery cut in ½ inch slices	1 Lb.	5 Lbs.
Water, boiling	2 Gal.	10 Gal.
Onions, thinly sliced	5 Lbs.	25 Lbs.
Bacon fat	1 Lb.	5 Lbs.
Flour	10 Oz.	2½ Lbs.
Milk, scalded	3 Gal.	15 Gal.
Salt	4 Oz.	1¼ Lbs.
Chili sauce	2 Qts.	10 Qts.
Parsley, chopped	8 Oz.	1½ Qts.

Size of portion - 8 ounces

Method:

1. Cover the sliced potatoes and celery with boiling, salted water and cook in steam kettle until the vegetables are tender.
2. Fry the sliced onions in the hot bacon fat until they are clear and delicately browned.
3. Add the flour to the fried onions and stir until smooth. Dilute the paste with part of the scalded milk.
4. Add the remainder of the scalded milk to the cooked vegetables.
5. Thicken the chowder with the onion paste and stir until smooth.
6. Add the chili sauce and garnish with chopped parsley.

Fish Chowder

	Amt. for 100 Por.	Amt. for 500 Por.
Pork, salt, diced	1 Lb.	5 Lbs.
Onions, sliced	1½ Lbs.	7 Lbs.
Potatoes, diced raw	8 Lbs.	40 Lbs.
Water, boiling	1 3/4 Gal.	9 Gal.
Haddock fillets, or other white fish	15 Lbs.	75 Lbs.
Salt	15 Lbs.	1¼ Lbs.
Pepper	½ Oz.	2½ Oz.
Milk, evaporated	12- 14½ Oz.	60 - 14½Oz.
Water, cold	3/4 Gal.	4 Gal.

Size of portion - 8 ounces

Method:

1. Wash fish in cold water and drain on a clean towel.
2. Cook the diced pork until crisp. Remove pork bits from pan.
3. Cook the sliced onions in the pork fat until tender.
4. Add the browned onions and diced potatoes to the water. Heat to the boiling point and let simmer for 10 minutes.
5. Add fish to the vegetables and simmer until the vegetables are tender and the fish can be flaked easily.
6. Stir in the salt, pepper, and diluted evaporated milk and simmer for 15 minutes. Add the cubed pork and serve.

Baked Fillet of Flounder in Milk

Ingredients	Amt. for 100 Por.	Amt. for 500 Por.
Fish fillets	30 Lbs.	150 Lbs.
Flour, sifted	1 Lb.	5 Lbs.
Salt	2 Oz.	10 Oz.
Paprika	1 Oz.	5 Oz.
Milk, evaporated	7 - 14½ Oz. cans	70-14½ Oz. cans
Water to dilute milk	3 Qts.	3-3/4 Gal.
Onions, sliced	5 Lbs.	25 Lbs.
Bacon fat	1 Lb.	5 Lbs.
Bacon	5 Lbs.	25 Lbs.

Size of Portion - 4 ounces

Method:

1. Thaw fillets and cut into 4-ounce servings. Wipe with damp towel.
2. Peel onions and cut into slices one-third inch thick.
3. Mix together the salt, paprika, and flour.
4. Dredge the fish in the seasoned flour.
5. Place floured fish on greased baking pan.
6. Pour diluted evaporated milk over fish and bake in a moderately hot oven at 325° F. for 10 minutes.
7. Sautè onions in melted bacon fat until tender but not brown.
8. Arrange onion slices on top of fish portions.
9. Place strip of bacon on each fillet; return fish to oven and cook until bacon is crisp.

Applesauce Cake

Ingredients	Amt. for 100 Por.	Amt. for 500 Por.
Sugar	4 Lbs.	20 Lbs.
Fat	2 Lbs.	10 Lbs.
Eggs	9	45
Applesauce	2½ Qts.	12 Qts.
Flour	5 Lbs.	25 Lbs.
Nutmeg	1 Tbsp.	5 Tbsp.
Cinnamon	2 Tbsp.	2½ Oz.
Cloves	2 Tbsp.	2 Oz.
Salt	1 Tbsp.	1½ Oz.
Soda	1 Oz.	5 Oz.
Raisins	3 Lbs.	15 Lbs.
Vanilla	1 Oz.	5 Oz.

Size of portion - one piece 2 inches by 2½ inches.

Method:

1. Cream sugar and fat together and add slightly beaten eggs. Cream thoroughly.
2. Add applesauce to fat mixture.
3. Sift dry ingredients, divide into two parts, and add raisins to one part.
4. Add flour and raisin mixture to fat mixture and blend.
5. Add vanilla and second part of flour mixture and mix well.
6. Bake about 1 hour in a slow oven at 325° F.

Deep Dish Apple Pie

Ingredients	Amt. for 100 Por.	Amt. for 500 Por.
Sugar	3 Lbs. 12 Oz.	18 Lbs. 12 Oz.
Cane or corn sirup	3 Lbs.- 12 Oz.	18 Lbs. 12 Oz.
Cinnamon	1 Oz.	5 Oz.
Nutmeg	¼ Oz.	1¼ Oz.
Flour or cornstarch	3 Oz.	15 Oz.
Salt	¼ Oz.	1¼ Oz.
Apples, sliced	24 Lbs.	120 Lbs.
Butter or shortening melted	1 Lb.	5 Lbs.
Pie pastry	8 Lbs.	40 Lbs.

Size of portion - one piece 2¼ by 2½ in.

Method:

1. Spread sliced apples evenly in greased baking pans.
2. Sprinkle apples with combined sugar and spices.
3. Pour melted shortening over top of apples.
4. Roll pie pastry 1/8-inch thick and cut into strips 3 inches wide.
5. Lay strips of pastry across pan so that the surface is entirely covered.
6. Brush top with milk.
7. Bake at 425° F. to 450° F. for 1 hour or until the apples are tender.

Note: 50 percent of the sugar has been replaced by cane or corn sirup.

Operational TIPS

Training the Sales Staff

In-service training of your cafeteria sales personnel is essential to effective merchandizing of your food and to courteous service to the customers.

Counter servers, bus boys, tray-girls, checkers, and cashiers, all are sales persons because they are merchandizers of food and service. No matter how good the food may be, it does not fulfill its purpose unless it is served quickly and efficiently by considerate, courteous counter salesmen.

Your seating capacity may or may not be adequate, depending upon whether customers' lines move quickly past counter, checker, water fountains, which are stocked with clean, cold glasses, to clean tables. If any one of these sales or service functions breaks down, the resultant loss in efficiency may cost the good will of the customers.

Good salesmanship and efficient service require careful selection of workers plus careful in-service training for the job. Recognition of good workmanship by in-grade and regular promotion improves the service workers' morale and reduces labor turn-over.

The manager is the only person who sees the cafeteria organization and its administration as a whole. Therefore, he should plan the in-service training program and its schedule.

Each department head or supervisor knows the needs and detailed operations of his department. Supervisors, then, should assist the manager to develop training programs in their departments and should act as instructors in their respective fields.

Managers should write to the State Director of Vocational Education at their State capitals to find out if training programs in food merchandizing are offered through the vocational schools. Restaurant management classes also are given in many States in cooperation with the State restaurant association and the State health department.

To aid you with in-service training of your supervisory and sales personnel, send for the following Government publications:

1. Training Restaurant Sales Personnel by Ruth M. Lusby, Vocational Division Bulletin No. 222, Business Education Series No. 15. For sale by the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Price: 35 cents per copy.

2. Job Instruction Training for Supervisory Personnel in Sales and Merchandising Organizations. For sale by the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Price: $1.25 per copy.

At meetings of food service managers in your city show one or more of these excellent training films:

1. "Food for Thought," produced by the Stouffer Corporation, 1375 Euclid Ave. Cleveland 15, Ohio. Information about this excellent color film strip can be obtained by writing to Walter S. Wood at the above address. The subject is food service.

2. "The Way to a Man's Heart," produced by the National Live Stock and Meat Board. Information about this film may be obtained by writing to Castle Distributors Corporation, 30 Rockefeller Plaza, New York 20, N. Y. The subject is meat selection and preparation.

3. "Dishwashing Dividends," produced by the Economics Laboratory, Inc., St. Paul 1, Minn. The subject is efficient dishwashing. This is an excellent film for both supervisors and food service workers.

What's New in FACILITIES

Is Your Problem Space?

The first question that arises in connection with feeding facilities, whether it involves planning a new facility or remodeling an old one,is "How much space will be needed?" The coefficient of 22 square feet per person seated, generally used in planning commercial kitchens, does not apply to industrial cafeterias.

A food service manager in a manufacturing plant knows the number of meals to be prepared and can control the number of workers released for lunch at definite periods. It is this "meal load" and the number of workers to be seated at one time which determine the space required.

The ktichen and dining areas should be considered as two distinct parts. The kitchen accommodates the storage and preparation of food to meet the peak meal load, while the dining area houses and serves those receiving the food.

Therefore, each area should be sized in proportion to its specific job.

Considering the kitchen coefficient first, it has been found that as the peak meal load increases,the coefficient for space determination decreases, as illustrated below.

Table of Cafeteria Kitchen Area Coefficients Based on Meal Loads

Meal load	Base figure	Coefficient square feet
100 - 200	200	5.00
200 - 400	400	4.00
400 - 800	800	3.50
800 - 1300	1000	3.00
1300 - 2000	2000	3.50
2000 - 3000	3000	2.00
3000 - 5000	5000	1.85
5000 - 8000	8000	1.70

These figures are based upon the standard plans developed by the U. S. Department of Agriculture. The base figure is the recommended multiplier in average cases.

Although a sliding coefficient scale is true for the kitchen area, it does not apply to the dining room. The dining room coefficient must include the seating space and the serving counter area, aisle space, and dishwashing facilities. These elements are related to the number being served and seated at one time rather than to the number of meals prepared. Study of many types of facilities has shown that 17 sq. ft. per person seated are necessary to provide adequate space. This coefficient remains constant.

To illustrate how to apply the two separate coefficients in actual practice, we assume that 1,200 people must be fed in a $1\frac{1}{2}$-hour period. For example:

Kitchen Area

Kitchen meal load 1,200

Kitchen coefficient selected from table (meal load 800 - 1300) 3 sq. ft.

Base figure applicable 1,000

Total kitchen area required 1,000 x 3 sq. ft. 3,000 sq. ft.

Dining Room Area

If all 1,200 workers must be seated at one time (coefficient 17 sq. ft. per person seated), dining area required 1200 x 17 sq. ft. 20,400 sq. ft.

By staggering the lunch period in 3 periods, 400 workers must be seated at one time, the coefficient 17 sq. ft. per person seated, the area required is 400 x 17 sq. ft. 6,800 sq. ft.

	Seating at one time 1,200	Seating 400
Kitchen area	3,000sq.ft.	3,000sq.ft.
Dining room area	20,400sq.ft.	6,800sq.ft.
Total area	23,400sq.ft.	9,800sq.ft.

The wide divergence of these totals shows the importance of considering the kitchen and dining room as two separate areas, and emphasizes how space can be saved by staggering the lunch period. Adequate space must be allotted to the feeding facility to obtain the best results in food production.

Merchandising Food to Workers

1. Long, slow-moving cafeteria lines discourage worker patronage and send workers to nearby lunch stands.

2. Short, fast-moving cafeteria lines encourage more worker patronage.

3. Food arranged on serving counters in usual menu sequence helps customers to make good food selections quickly.

4. An attractive "special lunch" at a moderate price facilitates food selection and provides the worker with a nutritious meal.

5. A well-displayed sample "special lunch" plate or tray helps to "sell" it.

6. Well-prepared, attractively served foods look appetizing and encourage food sales. Vary the menu from day to day to keep worker-patrons interested in food.

7. Color harmony and color contrast give "eye appeal"to foods.

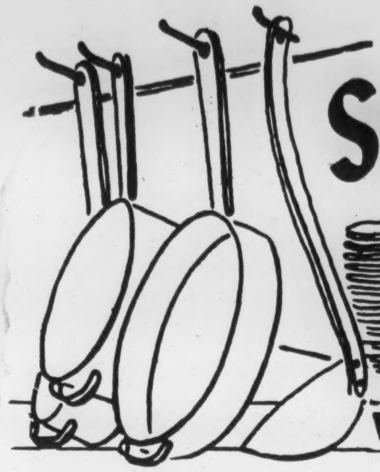
8. Foods grouped together according to kind improve the appearance of the display and make quicker selections possible.

9. Foods displayed in containers and on dishes of suitable size and shape look well and can be served more easily.

10. An adequate number of competent servers is essential to efficient cafeteria counter service.

11. Pleasant, alert, neatly uniformed sales persons foster customer good will.

12. Effective food merchandizing and courteous service enable the worker to select a good lunch and give him time to enjoy it. A satisfied worker becomes a regular cafeteria patron and, moreover, a cafeteria booster.



SERVING MANY

Merging INDUSTRIAL NUTRITION SERVICE

Food news for individuals and groups promoting nutrition education, and for food service managers in industrial plants, restaurants, hospitals, and hotels.

Washington 25, D.C. No. 15

SEPTEMBER 1946

IT'S

HOME FOOD PRESERVATION TIME!

ATTENTION!

PLANT MANAGERS AND FOOD SERVICE MANAGERS

USDA's industrial feeding program functions to give you technical assistance on all industrial feeding problems. This service is available upon request, without charge.

Are you planning new facilities or redesigning existing facilities? Do you need plans, charts, and equipment lists?

Do you need help in making your operation more efficient? Is your problem one of menu planning, food purchasing, food preparation, food merchandising, cost control, or in-service training of food service workers?

Are you interested in a food selection program to popularize your food service? Better eating habits will mean better health and greater efficiency of workers.

If you want information on any or all of the above send in your request, outlining your problem in detail. Materials and recommendations to meet your particular problem will be supplied. Mail your letter to

Industrial Feeding Program
Food Distribution Programs Branch
Production and Marketing Administration
U. S. Department of Agriculture
Washington 25, D. C.

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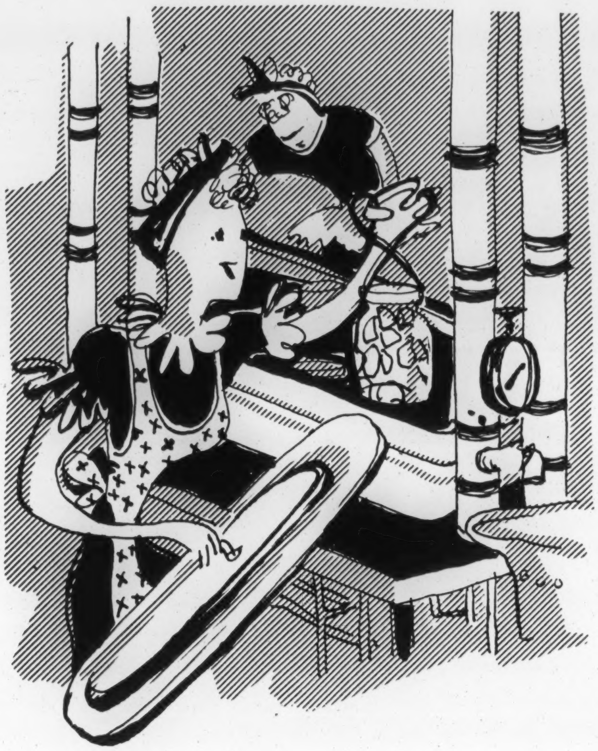
CARTOONS BY KAY JOHNSON

Industrial Nutrition HIGHLIGHTS

For Editors of Plant Publications

Can if you can!



September is food-preservation time. Last year, something like 25 million American housewives stocked their winter larders with over 3½ billion jars of food canned at home or in community canning centers. As a result, their families enjoyed tasty, health giving foods during the months when commercially canned produce was in short supply.

repeat performance

This achievement calls for a "repeat" performance this year. Demands for food are continuing, and the 25 million homemakers who did so well last year are urged to get back in the harness. Those who didn't put up any food last year should by all means do so this year They'll find it a food insurance policy that's in keeping with sound household economics.

There are some 6,000 community canning centers throughout the country. They are generally well equipped and under expert supervision. You can locate the one in your vicinity by calling or writing the State office of Production and Marketing Administration, your County Extension Agent, your local American Red Cross headquarters, or your town and city officials. If there are no centers in your community or plant, can foods in your home. If you are without the necessary canning equipmemt, pool your resources with a neighbor who has it. Better still -- join with a group of your neighbors and hold a neighborhood canning bee.

Whatever the means and methods, put up all the food you can for winter use. You'll find it pays -- in more ways than one.

the sugar factor

According to latest available information, sugar will continue to be short of demand. Ration stamps 9 and 10 will be available for canning sugar until October 31. Each stamp will entitle you to 5 pounds of sugar. Remember, this year additional supplies are not available through application to your local OPA board. Use your 10 pounds sparingly.

TAKE HOME IDEAS

Homemakers may need to fall back on sugar substitutes to complete their canning jobs. The Bureau of Human Nutrition and Home Economics makes the following suggestions:

Honey: Use it to replace as much as ½ of the sugar.

Corn sirup: Use it to replace as much as 1/3 of the sugar.

Do not use strong-flavored sweeteners like dark honey, brown sugar, sorghum, and molasses, since these change the flavor of the fruit.

When making sirups for canning fruits use this procedure:

Boil the sugar and fruit juice or water together for 5 minutes. Remove the scum.

For thin sirup for sweet fruits use 1 cup sugar to 3 cups fruit juice or water.

For medium sirup for moderately sweet fruits use 1 cup sugar to 2 cups fruit juice or water.

For thick sirup for sour fruits use 1 cup sugar to 1 cup fruit juice or water.

free booklets

When you have fruit and no sugar, put up the fruit in unsweetened juice form. Directions for such canning are given in "Home Canning of Fruits and Vegetables," AWI-93, available free on request to the Office of Information, U. S. Department of Agriculture, Washington 25, D. C.

Two other timely booklets available by postcard request are:

"Homemade Jellies, Jams and Preserves," Farmers Bulletin 1800.

"Pickle and Relish Recipes," AWI-103.

Freeze foods, too !

If you have a deep-freeze unit or if you rent a locker in a freezing plant, you can have fresh frozen summer and fall foods all winter long.

There is more to food freezing, of course, than the quick-freezing process itself. The variety of fruit or vegetable, the stage of ripeness, the way it is processed before freezing, and the way it is packaged, all figure in the color, flavor, and goodness of the frozen food.

For the "know how" of quick freezing, write for the booklet "Home Freezing of Fruits and Vegetables," AIS-48. Available free (in single copies) from the Office of Information, U. S. Department of Agriculture, Washington 25, D. C.

To help home preservers with their food canning and freezing problems, several excellent motion pictures have been developed by the Department of Agriculture.

Send for Miscellaneous Publication No. 574, "Motion Pictures of the United States Department of Agriculture," 1945. This booklet gives full information about films and slides and where and how to obtain them.

Food selection news

In some plants, nutrition education of workers is closely interwoven with the cafeteria's operation. In others, busy food service managers would like to carry on this activity but just cannot find time. They will be interested in a simple nutrition education device, made to order for industrial workers and available through the American Red Cross. It is the Tray Scoring Plan.

A year ago the United States Department of Agriculture and the American Red Cross perfected the plan originally developed in an industrial area and widely used there by war plants. During the war, the Tray Scoring Plan proved to be an effective educational technique, and it now continues to be popular among workers.

At Standard Oil Company's Richmond, California plant, 500 of the 700 workers recently participated in the project. The workers' food selection at this Standard Oil plant was found to be better than average, but the need for improvement was noted. Of the 500 trays checked, 97 were excellent and 195 were good, but 125 were fair and 83 were poor.

If you are interested in improving your workers food selection, get in touch with your local American Red Cross chapter for information concerning the Tray Scoring Plan.

The month's abundant foods

Fall vegetables from victory gardens, and fruits harvested in orchards and back yards hightlight the September list of abundant foods.

Also abundant in most areas are white potatoes, onions, western peaches, cantaloups, and lemons. Larger supplies of meats, poultry, and butter are also expected to be available to consumers.

Food Service News

For Food Service Operators and Dietitians

Spare that sugar!

Although sugar recently purchased from Cuba by Secretary of Agriculture Clinton P. Anderson for the United States promises some relief from shortage conditions, food service establishments will find it necessary to continue to conserve their allocations the remainder of this year and possibly throughout 1947.

Stretching sugar rations in industrial feeding establishments means not only watching the sugar bowls but guarding the sugar bins. Most of the sugar is used in baking, and not in the dining room. Therefore, the food service manager should be doubly careful about the sugar-consuming items on the menus, and the amount of sugar used in many popular recipes.

some ways to save it

Try some of these sugar-saving ideas:

1. Serve fresh fruits often for dessert. Melons, oranges, grapes, and apples will be plentiful in most areas in September.

2. Combine fresh fruits in fruit cup or fruit compote. Sweeten them with honey or corn sirup.

3. Use a fresh fruit salad occasionally instead of a baked dessert.

4. Use sweetened frozen fruits in sundaes and for cobblers, shortcake, and deep-dish pies.

5. Save sweetened canned fruit juices and use them in fruit sauces for puddings, and for moistening and sweetening puddings like apple crisp.

6. Use egg and fruit fillings like the "Sunshine cake filling" given on page 8.

7. Spread thin layers of jellies and preserves on cakes instead of using sugar icings.

8. Substitute sirups for part of the sugar in cakes and pastries. The directions for using sugar substitutes are given on page 2 of "Saving Sugar in Industrial Feeding."

9. Use old-fashioned soft molasses cookies, crisp spicy ginger snaps, and warm gingerbread occasionally on your dessert counter.

10. Combine sugar and sirup for sweetening puddings, fillings, muffins, and fruits.

For additional sugar-saving tips, write for a free copy of the booklet "Saving Sugar in Industrial Feeding."

U. S. Department of Agriculture
Production and Marketing Administration
Washington 25, D. C.

Please send ________ copies of your bulletin "Saving Sugar in Industrial Feeding".

PLANT________________________________

STREET________________________________

CITY______________ ZONE_________ STATE__

SIGNED________________________________
Food Service Manager

"Must" reading

Food Service Managers should read the story entitled "Food Service for Workers", which appears in the July issue of MECHANICAL ENGINEERING. The article is a comprehensive resume of a 120-page report which the National Research Council Subcommittee on Nutrition made to the Committee on Fatigue in Industry. For reprints write

Dean F. M. Feiker
National Research Council
2101 Constitution Avenue
Washington 7, D. C.

MENUS
For Special Lunches

Menus for Special Lunches for September include the plentiful use of white potatoes, onions, cantaloups, lemons, and peaches since these are expected to be abundant in most States. Garden vegetables and early fall fruits are used frequently. Asterisks indicate foods in plentiful supply.

Barbecued spareribs 1/
Parsleyed new potatoes*
Buttered carrot strips
Corn bread with butter or fortified margarine
Cantaloup*
Milk

Pot roast of beef with vegetables 2/
Oven-browned potatoes*
Apple, celery, and nut salad with honey dressing 3/
Whole-wheat bread with butter or fortified margarine
Baked orange custard 4/
Beverage

Cold plate:
  Swiss cheese
  Stuffed egg
  Sliced liverwurst
  Potato* salad
  Sliced tomatoes
Corn and lima bean succotash
Rye bread with butter or fortified margarine
Honeydew melon with lemon*
Milk

Fruit-stuffed pork chop 5/
Baked potato*
Green beans
Carrot sticks
Bran muffin with butter or fortified margarine
Lemon* milk sherbet
Beverage

Baked fish fillet
Scalloped potatoes*
Combination vagetable salad
Enriched bread with butter or fortified margarine
Gingerbread with lemon* sauce
Milk

Boston baked beans with salt pork
Sliced tomatoes
Glazed onions* 6/
Steamed brown bread with butter or fortified margarine
Fresh fruit salad with cream cheese and nut ball
Beverage

Cold plate:
  Chicken salad
  Sliced tomatoes
  Cottage cheese
  Potato* chips
Corn-on-the-cob
Rye bread with butter or fortified margarine
Plain cake with sunshine filling 7/
Beverage

Swiss steak with onions*
Mashed Potatoes*
Summer squash
Enriched roll with butter or fortified margarine
Apple crunch 8/

Roast lamb with mint sauce
Oven-browned potatoes*
Eggplant with tomatoes and onions* 9/
Enriched bread with butter or fortified margarine
Peach* ice cream
Beverage

Fried fish steak with lemon*
Creamed potatoes*
Green peas
Corn sticks with butter or fortified margarine
Lemon* snow with custard sauce
Beverage

Cold plate:
  Sliced ham
  Veal loaf
  Sliced pimiento cheese
  Potato* salad
  Onion* and green pepper rings
Hard roll with butter or fortified margarine
Deep-dish peach* pie
Milk

Meat loaf with tomato sauce
Parsleyed new potatoes*
Scalloped onions*
Whole-wheat bread with butter or fortified margarine
Lemon* chiffon pudding
Milk

Fried chicken with cream gravy
Mashed potatoes*
Corn-on-the-cob
Sliced tomato salad
Hot biscuit with butter or fortified margarine
Cantaloup*
Milk

Breaded veal chop
Au gratin potatoes*
Snap beans
Pumpernickel with butter or fortified margarine
Fresh peach* sundae
Beverage

Baked stuffed fish
Hashed brown potatoes*
Stewed tomatoes and onions*
Enriched bread with butter or fortified margarine
Cup cake with orange and lemon* sauce10/
Milk

Footnotes

1/ See attached recipe for barbecued spareribs.

2/ See recipe on page 15 of "Making the Most of Meats."

3/ See recipe for honey fruit dressing in May-June "Serving Many".

4/ See recipe for baked orange custard in March "Serving Many."

5/ See attached recipe for fruit-stuffed pork chop.

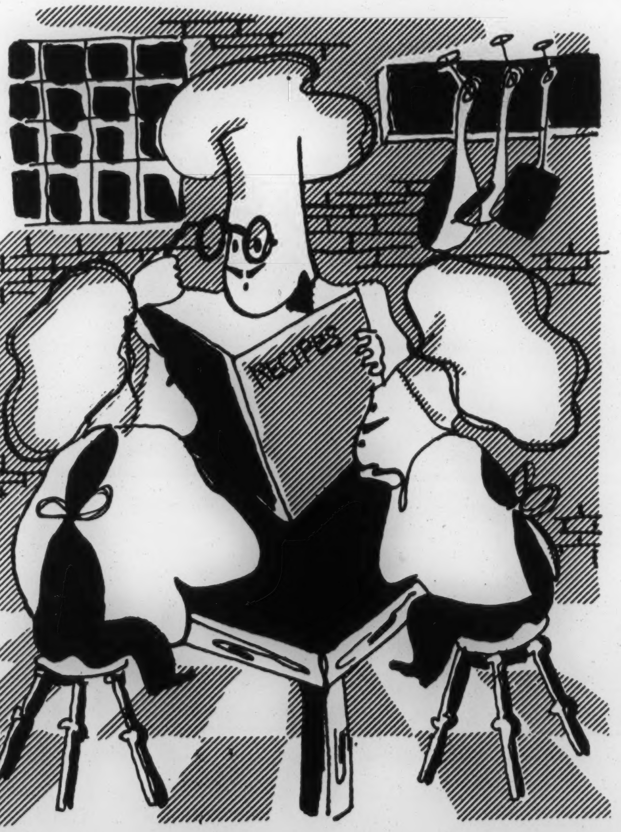
6/ See attached recipe for glazed baked onions.

7/ See attached recipe for sunshine filling.

8/ See attached recipe for apple crunch

9/ See attached recipe for scalloped eggplant.

10/ See attached recipe for orange and lemon sauce.



RECIPES

Oven Barbecued Spareribs

Ingredients	Amt. for 100 Por.	Amt. for 500 Por.
Pork spareribs	50 Lbs.	250 Lbs.
Onion, chopped	1½ Qts.	7 Qts.
Drippings	1½ cups	7 cups
Vinegar	1 Qt.	1 Gal.
Salt	2 Ozs.	10 Ozs.
Brown sugar	½ Lb.	2½ Lbs.
Chili sauce	1 Qt.	1 Gal.
Prepared horseradish	1 Cup	1 Qt.
Worcestershire sauce	1 Cup	1 Qt.

Size of portion - ½ pound of spareribs, plus sauce.

Method:

1. Cut spareribs in 3-rib servings and dredge with flour.

2. Put ribs in roasting pan and cover.

3. Cook spareribs in 350° F. oven for 45 minutes.

4. Brown chopped onion in some of the drippings. Add the other seasonings and let simmer for 10 minutes.

5. Open the roasting pan, turn the spareribs and spread with the sauce. Bake uncovered for 1 hour or until tender and browned.

Fruit-Stuffed Pork Chops

Ingredients	Amt. for 100 Por.	Amt. for 500 Por.
Pork chops 5 to 6 ozs. each cut 3/4-inch thick with pockets	100(40 lbs.)	(200Lbs.) 500
Bread crumbs from day-old bread	8 Qts.	40 Qts.
Minced onion	1 Qt.	1 Gal.
Tart apples, chopped	4 Qts.	20 Qts.
Raisins, seedless	1 Qt.	1 Gal.
Salt	2 Ozs.	10 Ozs.
Pepper, black	1 Tbsp.	1/3 Cup
Sage, ground	1 Tbsp.	1/3 Cup
Drippings	1 Cup	2 Lbs.

Size of portion - 1 chop, with dressing.

Method:

1. Combine ingredients for dressing.

2. Stuff pockets cut in side of chops and fasten with tooth picks.

3. Dredge the chops in seasoned flour and brown in hot drippings.

4. Put chops in roasting pan, add enough hot water to cover bottom of pan. Cover roasting pan and let chops cook slowly in 350° F. oven until tender and brown.

Glazed Baked onions

Ingredients	Amt. for 100 Por.	Amt. for 500 Por.
Onions, whole, peeled	100 large	500 large
Corn sirup	1 Cup	5 Cups
Butter or fortified margarine, melted	½ Cup	2 Cups
Paprika	1 tbsp.	5 Tbsp.
Salt	1 Oz.	5 Ozs.

Size of portion - 1 large onion.

Method:

1. Peel the onions and steam them until tender.

2. Arrange onions close together in greased baking pans.

3. Combine the corn sirup, melted butter, and salt and pour over the onions.

4. Sprinkle the tops of the onions with paprika.

5. Bake in a 400° F. oven for 20 minutes, basting occasionally until glazed.

Sunshine Filling of Cake

Ingredients	Amt. for 100 Por.	Amt. for 500Por.
Margarine or butter	1½ Cups	5 Cups
Flour	1½ Cups	7 Cups
Sugar	3 Cups	7 Lbs.
Grated orange rind	3/4 Cup	1 QQt.
Orange juice	2 Qts.	2½ Gal.
Salt Egg yolks	1½ Tsp.	1 Oz.
Egg yolks	12 Yolks	60 Yolks

Size of portion - 1 ounce per serving.

Method:

1. Melt the fat, add the flour and blend.

2. Mix the sugar, salt, grated rind, and juice.

3. Combine the sugar and fat mixtures, and cook, stirring constantly until thickened.

4. Add a small amount of the hot mixture slowly to the beaten egg yolks.

5. Combine the diluted egg and the flour mixtures and cook, stirring constantly for about 2 minutes, until thickened.

Scalloped Eggplant

Ingredients	Amt. for 100 Por.	Amt. for 500 Por.
Eggplant, peeled, sliced, and cubed	25 Lbs.	125 Lbs.
Onions, sliced	3 Qts.	4 Gal.
Tomatoes, canned or stewed	1½ Gal.	7 Gal.
Salt	2 Oz.	10 Ozs.
Pepper	1 Tsp.	3 Tbsp.
Drippings	1 Pt.	2 Qts.
Bread crumbs, dry	2 Qts.	10 Qts.

Size of portion - ½ cup.

Method:

1. Peel, slice, and cube eggplant in 3/4-inch pieces. Cook in boiling salted water 10 minutes, or until tender. Drain.

2. Fry onions, until clear, in the drippings.

3. Combine all ingredients and bake in moderate oven at 350° F. for 40 minutes.

Apple Crunch

Ingredients	Amt. for 100 Por.	Amt. for 500 Por.
Peeled sliced apples	(10 Lbs.) 2 Gal.	(50 Lbs.) 10 Gal.
Cinnamon	2 Tbsp.	1½ Oz.
Nutmeg	2 Tsp.	3 Tbsp.
Bread crumbs, dry	4 Qts.	20 Qts.
Honey	1 Qt.	5 Qts.
Water, hot	1 Qt.	5 Qts.
Margarine or butter, melted	3/4 Lbs.	4 Lbs.
Brown sugar	2 Lbs.	10 Lbs.
Lemon juice	½ cup	1 Pt.

Size of portion - ½ cup.

Method:

1. Combine the sliced apples, lemon juice, spices, and halve the bread crumbs and put in greased baking pans.

2. Pour the sirup and hot water over the apples and crumb mixture.

3. Mix the second half of the crumbs with the brown sugar and melted butter and sprinkle over the top.

4. Bake in moderately hot oven at 375°F. for 50 minutes to 1 hour, or until apples are tender and crust is browned.

5. Serve warm or cold with thin cream or lemon sauce.

Orange-Lemon Sauce

Ingredients	Amt. for 100 Por.	Amt. for 500 Por.
Orange sections	2 Qts.	2½ Gal.
Lemon juice	1½ Cups	1½ Qts.
Grated orange rind	2 Tbsp.	3/4 Cup
Grated lemon rind	1½ Tbsp.	½ Cup
Honey	2 Qts.	2½ Gal.
Water and fruit juices	2 Qts.	2½ Gal.
Cornstarch	8 Oz.	2½ Lbs.
Salt	1 Tsp.	2 Tbsp.

Size of portion - 2 ounces.

Method:

1. Pare the oranges in spirals and separate the sections.

2. Combine the cornstarch, salt, and grated fruit rinds. Dilute with cold water to make a paste.

3. Heat the remainder of the water and orange segments to the boiling point and add the honey.

4. Stir the cornstarch paste into the hot liquid and cook, stirring constantly about 5 minutes, until thickened.

5. Add the lemon juice and reheat to the boiling point.

6. Serve with gingerbread, cup cakes, sponge cake, or with cottage pudding.

Operational TIPS

Tailor-made cooks ?

Do you employ ready-made cooks and kitchen helpers, or do you have the tailor-made varieties? No one doubts the advantages in appearance, fit, and wearing qualities of suits tailored to order. Why do many food service operators depend on "ready-made "kitchen employees instead of those "tailored" by in-service training? True, it takes time and costs money to train kitchen workers. But labor turn-over costs money too, in spoiled materials and lost labor hours.

With labor shortages no longer the problem they were during the war, food service managers should give more time and thought to personnel training. During these times of food shortages and high prices, well-trained kitchen workers are invaluable to any industrial feeding establishment.

some pointers

Try some of these in-service training techniques in your plant.

1. Promote potentially good workers rather than employ new ones. This helps morale and develops loyalty and interest
2. Rotate kitchen helpers whenever possible so that they learn to do more than one type of work. This heightens their interest in routine jobs and provides experienced workers to fill in when absent from the job.
3. Take time to try to fit the worker to the job. If he doesn't fit one job, try him in another. Use dismissal only when absolutely necessary.
4. Explain "why" when you give a direction or make a request. Informed food service workers are more intelligent employees.
5. Use standardized recipes throughout your food service. Develop these recipes in your own "test kitchen" whether it be in a laboratory or at the range or bake oven.
6. Demonstrate "how" a new process should be performed or how a new piece of equipment should be handled.
7. Specify the number of servings of foods to be prepared. Do not blame the cook for shortages, or the baker for oversupply. How much is the manager's responsibility.
8. Check the perishable foods and leftovers carefully and enlist the cooks' and helpers' aid in avoiding the waste of foods at all times.
9. Keep the kitchen equipment in good working order. Train your employees to keep the kitchens clean, and the aisles free for the passage of workers and supplies. A food workshop should be as clean and orderly as a battleship.
10. Keep the cooks informed about how many persons were served and how the daily costs are running. They will be just as interested as you are in keeping customer count up and operating costs moderate.

Personnel Training Materials for the Food Service Manager

1. Job Instruction Training for Supervisory Personnel in Sales and Merchandising Organizations available from Superintendent of Documents, Government Printing Office, Washington 25, D. C. Price $1.25 a copy.
2. Training Restaurant Sales Personnel by Ruth M. Lusby. Vocational Division Bulletin No. 222, Business Education Series No. 15 Available from Superintendent of Documents, Government Printing Office, Washington 25, D. C., Price 35 cents.
3. Standards for Cafeteria Service by Frances Dunning. Burgess Publishing Co., Minneapolis, Minnesota, 1941. Price $1.50.

As a further aid to personnel training, the U. S. Department of Agriculture has just released two wall posters for use in food service kitchens. Copies are available free upon request.

What's New in FACILITIES

Production flow a "Must"

Whether you already have in-plant facilities or are planning a new installation, production flow is a "must".

Today no manufacturer would think of laying out his plant without paying special attention to this important factor. Production flow conserves manpower, and results in the most economical production. A job performed in an orderly sequence is easier on everyone. These factors have been recognized in every branch of industrial production.

The preparation of food is a production process. Careful planning of all food service facilities is still more important since you are dealing with perishable materials. Properly prepared and preserved food protects your workers' health and efficiency. Greater efficiency pays off in increased production.

The food production flow chart on the back page of this issue can be used to check the efficiency of an existing lay-out or in preparing drawings for new facilities. It shows the logical procession of operation and indicates the fundamental principles in planning food service units.

On the chart, "Management", the control unit of the whole operation, appears at the top. The manager's office should be placed in the plan so that it directly controls receiving, storage, all preparation units, and, wherever possible, it should be extended to cover the serving and dining areas.

The kitchen plan should be so coordinated that supplies will move from receiving area to storage rooms without traversing food production areas. Work units for rough preparation, such as vegetable cleaning and meat cutting, should be so placed that materials move in sequence from storage areas to cooking areas with a minimum of cross traffic and lost motion.

The storage facilities, both dry and refrigerated, should be carefully planned. The amount of food needed daily, the purchasing methods, and delivery schedules must be considered. Refrigerators of the walk-in type should be divided into three or four rooms and be equipped with individuals thermostatic controls to regulate the temperatures according to type of supplies stored. Departments such as the bake shop and the salad and sandwich sections require refrigeration for holding daily supplies and cooked foods. The counter should be placed according to the meal load and type of menu served. Adequate storage and refrigeration space should be provided at each counter.

The food production flow chart is taken from Part II, Section 1, "Lay-out Design and Construction" from the manual "Industrial Feeding Facilities." Basic planning principles, presented and illustrated with design charts, standard lay-outs and equipment lists for different types and sizes of facilities are included in this manual. If additional information on redesigning or planning new facilities is desired, fill out this form and mail it to:

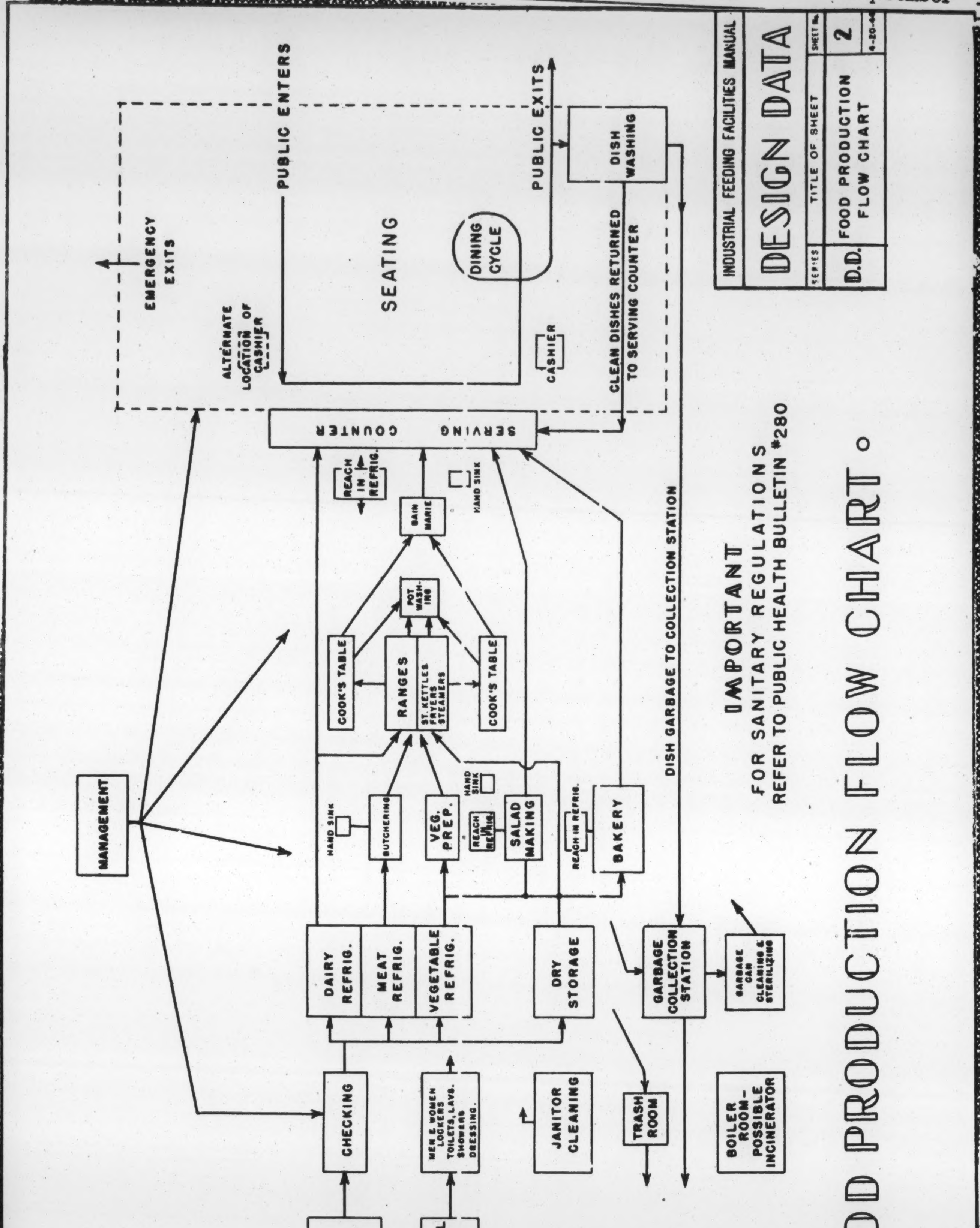
Industrial Feeding Program
Food Distribution Programs Branch
Production and Marketing Admin.,
U. S. Department of Agriculture
Washington 25, D. C.

Please forward material on planning industrial feeding service facilities.

Workers employed_________________

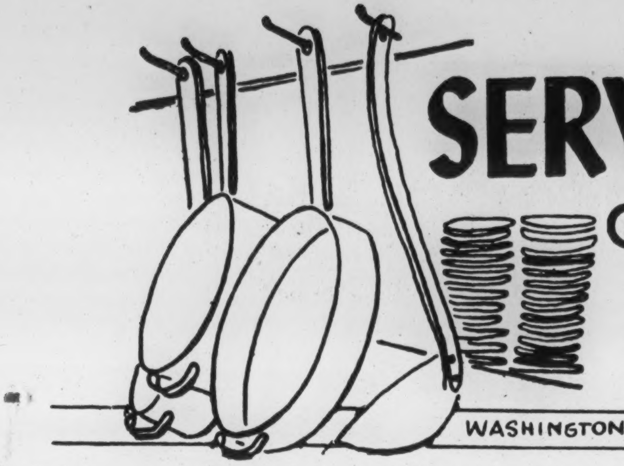
Type of food service______________
(cafeterias, lunchrooms, canteen, etc.)

Name and address__________________


INDUSTRIAL FEEDING FACILITIES MANUAL
DESIGN DATA
SERIES
D.D.
TITLE OF SHEET
FOOD PRODUCTION FLOW CHART
SHEET No.
2
4-20-44
FOOD DELIVERY
CHECKING
PERSONNEL ENTER
MEN & WOMEN LOCKERS TOILETS, LAVS. SHOWERS DRESSING.
JANITOR CLEANING
TRASH ROOM
BOILER ROOM-POSSIBLE INCINERATOR
MANAGEMENT
DAIRY REFRIG.
MEAT REFRIG.
VEGETABLE REFRIG.
DRY STORAGE
GARBAGE COLLECTION STATION
GARBAGE CAN CLEANING & STERILIZING
HAND SINK
BUTCHERING
VEG. PREP.
REACH IN REFRIG.
SALAD MAKING
HAND SINK
REACH IN REFRIG.
BAKERY
COOK'S TABLE
RANGES
ST. KETTLES FRYERS STEAMERS
COOK'S TABLE
POT WASHING
BAIN MARIE
REACH IN REFRIG.
HAND SINK
SERVING COUNTER
EMERGENCY EXITS
ALTERNATE LOCATION OF CASHIER
SEATING
PUBLIC ENTERS
DINING CYCLE
CASHIER
PUBLIC EXITS
DISH WASHING
CLEAN DISHES RETURNED TO SERVING COUNTER
DISH GARBAGE TO COLLECTION STATION

IMPORTANT
FOR SANITARY REGULATIONS
REFER TO PUBLIC HEALTH BULLETIN #280

· FOOD PRODUCTION FLOW CHART ·



SERVING MANY

Combining INDUSTRIAL NUTRITION SERVICE

Food news for individuals and groups promoting nutrition education, and for food service managers in industrial plants, restaurants, hospitals and hotels.

WASHINGTON 25, D.C.
NO. 11 and 12

MAY - JUNE 1946

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SAVE FOOD

– SAVE LIVES!

Food for Famine

Through the long war years, the thinking was food fights for freedom. Now that the war is over, food is still very much in the global picture. Only now, the cry is: conserve food...don't waste it...so that we can use it to fight world famine.

We made lots of promises when the war was still on. We said to our allies: scorch your earth, burn your bridges, wreck your trains. Stop the enemy however you can. Do all of these things, we told them. And when the fighting's over we won't forget.

The time has come. Now we must share with others. Are you saving wheat? Are you salvaging fats? Do you know and use the plentiful foods? No peace is possible in a hungry world. There can be no peace where famine walks. Everybody knows that.

So let's pitch in. Save and conserve. Buy just what you need and use it as you go along. Have a victory garden and grow your own foods. Then "put them up" for the winter months.

Let's keep our promises --- Let's meet our obligation. It's the American way.

★ ★ ★ ★ ★

SERVING MANY, combined with INDUSTRIAL NUTRITION SERVICE, has been redesigned to bring you the best features of both publications. "Industrial Nutrition Highlights," appearing on pages 3 and 4, is for editors of plant publications. "Food Service News," on pages 6 and 7, is for food service operators and dietitians. Menus and quantity recipes continue as a feature.

SERVING MANY is published by

UNITED STATES DEPARTMENT OF AGRICULTURE
Production and Marketing Administration
Food Distribution Programs Branch
WASHINGTON 25, D. C.

May - June 1946

Industrial Nutrition HIGHLIGHTS

For Editors
of Plant Publications

Workers join famine fight!

Workers and their families throughout the country are eager to do their part in the Nation's anti-famine campaign. The question uppermost in their minds is:

> "How can we get good nutrition in times of food scarcity, and still give full cooperation to the Famine Emergency Program?"

the answer is simple

1. Check your daily meals carefully to make certain that you have included foods in the Basic 7 Food Groups. See the guide below.
2. Do not overeat.
3. Save meats, fats and oils, wheat, and sugar, the foods most needed to save the millions of our neighbors from starvation.
4. Eat the foods which are in plentiful supply instead of those which must be saved.

Choose the Special Lunch!

Always remember that the well-balanced lunch "special" is often your best insurance that your mid-shift meal contains the vitamins, minerals, protein, and calories necessary to protect your health.

Use the guide below to check your daily meals, at home and at the plant.

Plant cafeterias are discovering that one of the best ways to save the scarce foods needed in our way on famine is to use those foods which are in plentiful supply. Your special lunch should reflect this kind of planning.

The BASIC 7 . . .

Include the Basic 7 foods in your meals every day:

Group I
Green and yellow vegetables

Group II
Oranges, tomatoes, grapefruit...
or raw cabbage or salad greens

Group III
Potatoes and other vegetables
and fruits

Group IV
Milk and milk products

Group V
Meat, poultry, fish, or eggs....
or dried beans, peas, nuts,
or peanut butter

Group VI
Bread, flour, and cereals...
(natural whole-grain -- or
enriched or restored)

Group VII
Butter and fortified margarine
(with added vitamin A)

What we can do now-

Whether we are eating at home or at the plant we can help fight famine right now by following these simple rules:

save wheat

Choose a serving of potatoes instead of wheat bread. Cut down on the use of cakes, pies, cookies, macaroni, noodles, spaghetti and vermicelli.

save sugar

Choose fresh fruits for desserts, instead of pies and cakes, as they become more plentiful on the market. You'll not only save sugar that way, but precious wheat, too.

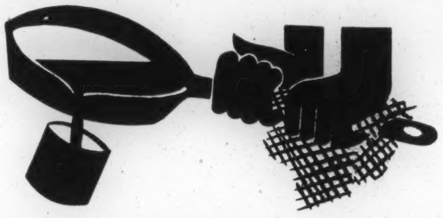
save meats

Choose fresh and frozen fish, plentiful now throughout the country, in place of meat once or twice a week. Poultry, eggs, cheese, and dry beans and peas, are also alternates for meat. Choose them once or twice a week. We learned how to save meats during rationing, and those rules apply today as we go into self-imposed rationing to save others from starving.

Make a salad a meal fit for a king, now that the luscious salad vegetables are making their colorful appearance. Serve it with cottage cheese, or grate Cheddar cheese or other processed cheese over the top to add to its food value and flavor. Serve liberal portions for supper and no meat is necessary.

Or if you and the family go in for vegetables in a big way, serve a generous amount of spinach with poached eggs for the main dish, or a big helping of garden-fresh asparagus topped with cheese sauce. Both of these dishes have been favorite meat substitutes for years. They're timely suggestions now because both spinach and asparagus are plentiful.

save fats and oils



Continue to salvage fats and turn them in to your grocer. Bake, broil and steam meats and fish. Do not fry foods. Cut down on your use of mayonnaise and other oil dressings. Use boiled salad dressing instead. Use rendered poultry fat in gingerbread, molasses cookies, spice cake, and chocolate cake instead of lard or other shortening. Use it also for cream soups and sauces. Make your drippings serve your needs for fats in pan frying, and seasoning.

Health notes

Vitamin "C" For Health

Health-giving vitamin C is found in oranges and grapefruit which are now adding a golden glow to the grocer's bins. Eat citrus fruits liberally, both at home and at the plant. Vitamin C, you know, helps to maintain health — nourishes bones, teeth, and blood vessels.

The Bureau of Human Nutrition and Home Economics of the U.S. Department of Agriculture has done some research on these fruits, which will be of interest to workers and their families. More orange, grapefruit, and lemon juice is extracted when the fruits are rolled gently with the hands before they are reamed.

Take home ideas

Watch Those Scarce Foods

Take a leaf from the plant cafeteria's book on good meal planning. The best way to save scarce foods is to use the foods in plentiful supply instead. Here are a few timely tips:

1) Instead of meats every day, use egg dishes, chicken, and fresh and frozen fish — all plentiful in May.
2) Instead of cakes, cookies, and pastries, use oranges and grapefruit for dessert often. You'll get a dividend in vitamin C if you do.

3) Use more liberally, seasonable vegetables such as spinach and asparagus, both plentiful in the growing areas in May. Serve salads often.
4) Save used fats and turn them in to your grocer.
5) Above all, produce food if you can. Keep up your victory garden and preserve food at home.

Food-on-the-job

In-Plant Feeding Pays Off !

Workers at the Eitel-McCullough plant in California must be on their toes and in top health as precision work there is exacting. All during the war they had a good record of food selection. Management stopped at nothing to see that workers had adequate food at low cost, with free mid-meal snacks as well. A recent diet rating project there shows that 87 percent of the workers get their daily requirement of citrus fruits, tomatoes or salad greens, all sources of vitamin C. Like many other workers, they do not get enough milk and green and yellow vegetables. Only 55 percent have the equivalent of 1 pint of milk daily and 58 percent have one or more servings of green and yellow vegetables. Only two workers failed to have their daily requirement of meat, potatoes, and other fruits and vegetables.

A high grade of morale among workers at Kay Ruth Dress Company and Delta Chenille Company in Mississippi, a reduction in illness and increase in production are the fruits of cafeterias recently installed by both companies. Adequate meals and an attractive environment in which to eat them is a sound investment.

FOOD SERVICE *News*

For Food Service Operators
and Dietitians

Accent on abundant foods!

With so much emphasis nowadays on "saving" and "sharing" foods, there may be some inclination to view the famine emergency program as a "belt-tightening" proposition here at home. Actually, this is not the case. The average American need suffer little or no loss of calories to help in the fight against hunger abroad, and food service establishments need not offer their patrons a reduced bill of fare.

The foods we are asked to conserve and share are wheat products, sugar, and fats and oils. We must, of course, reduce the serving and consumption of these products if we are to help in the famine campaign, but these reductions can be effectively offset by the substitution of other foods in plentiful supply.

Putting it briefly, you can help fight famine by conserving the scarce foods -- and maintain well-rounded menus by accenting the plentiful foods!

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Plentiful foods:

Foods in plentiful supply during May and June in most regions are: Eggs, chicken (fowl), fresh and frozen fish, white potatoes, onions, carrots, head lettuce, and citrus fruits.

Locally grown spring vegetables should be abundant, especially spinach, asparagus, scallions, radishes, and rhubarb. Among the spring fruits will be strawberries.

no makeshift menus

The substitution of abundant foods for the "famine" foods need not result in makeshift menus. Attractive and nourishing dishes can be prepared with them -- dishes that will please and delight your patrons. Here are a few suggestions:

1. Use fresh fruits, and milk and egg desserts instead of cakes and pies. You'll save fat, wheat flour, and sugar.

2. Use potatoes in place of bread and bread crumbs. For example: Potato stuffing - Use in proportion of 2 cups of mashed potatoes to 1 cup of dry bread crumbs. Topping for meat pie - Shepherd's pie is made with a "crust" of seasoned mashed potatoes. The potatoes should be moist, not dry.

3. Use abundant eggs, fish, and fowl instead of scarcer fat meats, in your cafeteria and special lunch menus.

For additional ideas see the menus on pages 8 and 9.

Conserve scarce foods!

The saving of the scarce foods cannot be overemphasized. Reduced consumption of wheat products and fats and oils is one way of conserving them for the fight against famine. Cutting waste of these products is another and equally important method.

Save every bit of wheat bread. Toast the heels of the loaves and use them for dry bread crumbs, croutons, and bread puddings.

Doing their part . . .

Milk Distributor Helps in Famine Fight

Like many other plants throughout the country, Sheffield Farms Company of New York is doing its part in the campaign against hunger and starvation abroad. A 7-point food conservation program has been adopted by the firm's industrial cafeteria and is resulting in substantial savings of the critical foods — wheat and fats and oils.

The program is as follows:
1. All hot meat sandwiches served as open sandwiches.
2. A 100 percent discontinuance of two crust pies.
3. A 50 percent increase in substitution of fruits for pastries and cakes.
4. A 100 percent elimination of three-layer cakes.
5. Complete use of boiled dressings instead of oil dressings.
6. A 100 percent broiling of fish instead of frying.
7. Elimination of extra dressing for salads that have already been prepared with dressing.

The Sheffield Farms cafeteria serves between 400 and 500 noonday meals.

What are you doing? Send us a brief outline of the food conservation program in your plant.

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Plentiful fish in the United States - May, June 1946

New England	Middle Atlantic	South Atlantic	Central	Gulf Coast	Pacific Coast
Cod	Croacker	Spanish mackerel	Cod fillets	Crabs	Crabs
Haddock	Flounder	Mullet	Lake trout	Mullet	Halibut
Mackerel	Mackerel	Sea trout	Rosefish fillets	Sea trout	Rockfish
Rosefish	Shad		Yellow perch	Shrimp	Salmon
Whiting	Whiting		Yellow pike		Shad
			Whitefish		Sole
			Whiting		

SAVE SCARCE FOODS !

MENUS

for Special Lunches

These menus suggest ways of using foods in abundant supply, and are planned to conserve foods needed in the Famine Emergency Program. Plentiful foods in national supply are indicated by asterisks.

Barbecued frankfurters
Hashed brown potatoes*
Spring relish plate: (scallions, carrot strips and radishes)
Rye bread with butter or fortified margarine
Chocolate bread pudding 1/
Beverage

Creamed eggs* on cornbread 3/ (Split the pieces)
Fresh green beans
Sliced tomato and lettuce* salad with cooked dressing 4/
Strawberry ice cream
Beverage

Baked shad* with lemon 5/
Parsleyed new potatoes*
Green peas
Corn muffin with butter or fortified margarine 6/
"Ambrosia" (sliced oranges*) 7/
Milk

Meat loaf with brown gravy 2/
Mashed potatoes*
Harvard beets
Celery
Whole-wheat bread with butter or fortified margarine
Orange gelatine with orange* sections
Milk

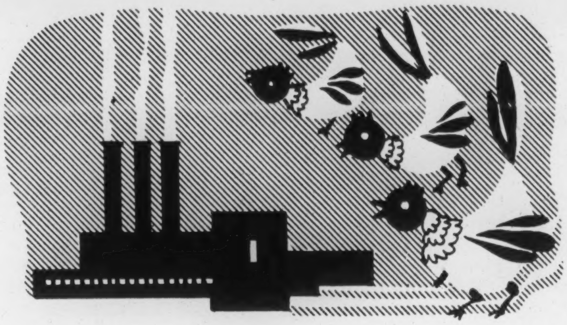
Pot roast of beef with vegetables
Steamed potatoes*
Glazed carrots*
Enriched roll with butter or fortified margarine
Fresh fruit cup
Milk

Braised liver with gravy
Steamed new potatoes* in skins
Mixed green salad (Head lettuce*, tender spinach* leaves, scallions*)
Whole-wheat bread with butter or fortified margarine
Baked rhubarb*
Milk

Pan-broiled lamb patties
Scalloped potatoes*
Head lettuce* with Chiffonade French dressing
Rye bread with butter or fortified margarine
Milk

Scrambled eggs*
Baked potato*
Grapefruit* and orange* salad with honey dressing 8/
Enriched biscuits with butter or fortified margarine
Butterscotch pudding
Beverage

Smoked sausage links
Potatoes* au gratin
Green asparagus*
Oatmeal muffin
Baked apple
Milk



Fricasseed chicken*
Spoonbread
Cabbage, carrot* and green pepper salad
Apricots a la mode
Beverage

Baked mackerel* with egg* sauce
Creamed new potatoes*
Scalloped tomatoes
Carrot sticks*
Enriched roll with butter or fortified margarine
Baked custard
Beverage

Roast veal and dressing with gravy
Steamed new potatoes*
Carrot*, apple, and raisin salad on lettuce*
Orange* sherbet
Milk

Savory creamed chicken* on noodles 9/
Baked potato*
Shredded carrot* salad
Peach shortcake
Coffee

Pan fried sea trout* with lemon
Cole slaw
Mashed potatoes*
Oatmeal muffin with butter or fortified margarine
Open-faced fresh strawberry pie 11/

Corned beef with vegetables (potatoes*, carrots*, onions)
Philadelphia relish 10/
Cornbread with butter or fortified margarine
Citrus fruit* cup

☆ ☆ ☆

1/ Modify caramel bread pudding recipe in April 1946 issue of SERVING MANY by adding chocolate or cocoa.
2/ See attached recipe for meat loaf using rolled oats.
3/ See recipe for cornbread in April 1946 issue of SERVING MANY.
4/ See attached recipe for cooked salad dressing.
5/ See recipe in April 1946 issue.
6/ See attached recipe for baked shad.
7/ See attached recipe for "Ambrosia".

8/ See attached recipe for "Honey" dressing.
9/ See recipe for Savory creamed chicken in SERVING MANY for April 1946.
10/ See recipe for Philadelphia relish in SERVING MANY for September.
11/ See attached recipe for open-faced fresh strawberry pie.

☆ ☆ ☆

★★★★★

RECIPES

Meat Loaf with Rolled Oats

Ingredients	Amt. for 100 por.	Amt. for 500 por.
Beef, ground	15 lbs.	75 lbs.
Pork trimmings, ground	5 lbs.	25 lbs.
Onions, ground	12 ozs.	3-3/4 lb.
Salt	4 ozs.	1¼ lbs.
Pepper	2 tsp.	3 tbsp.
Rolled oats, regular type	2½ lbs.	12 lbs.
Milk	2½ qts.	3 gal.
Eggs	10	4 doz.

Yield - 100 3-1/2 ounce slices.

Method:
1. Mix the meats, seasonings and rolled oats together.
2. Beat eggs, add to milk and combine with meat. This may be done at low speed using dough-hook.
3. Scale into loaf pans and press firmly into corners of pans.
4. Bake for 1½ hours in a moderate oven (325° F.)

Baked Fillets of Shad

Ingredients	Amt. for 100 por.	Amt. for 500 por.
Fillets of shad	25 lbs.	125 lbs.
Salt	to taste	to taste
Paprika	to taste	to taste
Lemon juice	2 cups	2 qts.
Melted butter or chicken fat	1 cup	1 qt.
Parsley, minced	3/4 cup	1 qt.

Size of portion - 4 ounces

Method:
1. Lay fillets of shad on greased baking pans.
2. Brush fillets with melted fat to which the lemon juice has been added.
3. Sprinkle fillets with salt and paprika.
4. Bake at 350° F. from 10 to 15 minutes.
5. Sprinkle with finely minced parsley and serve.

"Ambrosia"

Ingredients	Amt. for 100 por.	Amt. for 500 por.
Sliced oranges and juice	8 doz.	40 doz.
Sirup or honey (as needed)	as required	
Lemon juice	1 pint	1½ qts.
Fresh grated coconut	2 cups	2½ qts.

Yield - 1 orange, size 175 to 200 is needed per serving.

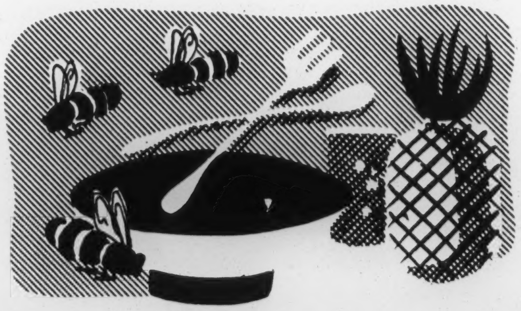
Method:
1. Peel the oranges to remove white inner skin.
2. Slice oranges crosswise in 1/3 inch slices. Remove seeds, if any.
3. Save orange juice, add lemon juice, sweeten to taste, and pour this sirup over sliced oranges. Chill thoroughly.
4. Serve in fruit dishes, topped with 1 teaspoon coconut.

"Honey" Fruit Dressing 1/

Ingredients	Amt. for 100 por.	Amt. for 500 por.
Canned or fresh fruit juices	(1½ qts.) 3 cups	(7 qts.) 3½ qts.
Lemon juice	1 cup	1 qt.
Orange juice	2 cups	2½ qts.
Honey, corn sirup or sugar	0-½ cup	0-2½ cups
Salt	2 tsp.	1 oz.
Paprika	1 tbsp.	½ oz.

Size of portion - 1 tablespoon

Method:
1. Mix the sirup or sugar and the seasoning together.
2. Combine the sirup mixture with the strained fruit juices. Chill.
3. Mix the dressing thoroughly before serving it.



Cooked Salad Dressing

Ingredients	Amt. for 100 por.	Amt. for 500 por.
Cornstarch	1½ cups	2 qts.
Water, cold	1 pint	1½ qts.
Vinegar	3 cups	4 qts.
Sugar, honey or corn sirup	1 cup	1 qt.
Paprika	2 tbsp.	1½ ozs.
Mustard, dry	2 tbsp.	2 ozs.
Salt	2 ozs.	10 ozs.
Eggs, shelled whole	1 pint	2½ qts.
Thin sour cream (may substitute evaporated milk)	2 qts.	2½ gal.
Clarified chicken fat or salad oil	1 cup	1 qt.

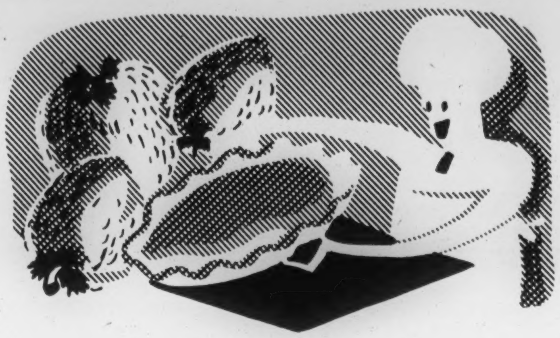
Yield - ½ gallon = 100 portions of 1 rounding tablespoon each (e.g. about 50 servings per quart.)

Method:

1. Mix cornstarch and spices together.
2. Add the sugar or sirup to the cold water.
3. Make a paste of the cornstarch and sirup mixtures. Beat until smooth.
4. Bring the vinegar to a boil, and add the cornstarch paste slowly until it is thickened. Continue cooking about 10 minutes.
5. Beat the eggs to mix the yolks and whites, add the milk slowly and beat until well blended.
6. Add the egg mixture slowly to the cooked paste stirring constantly and cook from 3 to 5 minutes or until the eggs are coagulated.
7. Add the fat just before removing dressing from heat.
8. Beat well and cook quickly.
9. This salad dressing may be stored in the refrigerator in a covered glass container or crock. For fruit salads it may be combined with equal parts of whipped cream, or smaller amounts of an uncooked meringue mixture.

Open-face Strawberry Pie

Ingredients	9 in. pie (6 serv.)	102 por. (17 pies)
Single crust pie shells	1	17
Fresh sliced strawberries	1 qt.	4 gal.
Sugar or sirup	½ cup	2 qts.
Whipping cream (when available)	¼ pint	2 qts.



Method:

1. Bake pie shells with well fluted edges.
2. Prepare strawberries as required, sweeten them and fill shells.
3. Cut and serve pie immediately, topped with whipped cream (when available.)
4. Raspberries, sliced fresh peaches and diced fresh pineapple are delicious used in this way. Frozen fruits may be used for fresh if extra juice is drained from them. Sweetened frozen fruits do not need additional sugar.

Chiffonade French Dressing

Ingredients	Amt. for 100 por. (2 qts.)	Amt. for 500 por. (10 qts.)
Parsley, minced	1 cup	1 qt.
Pimientos or red peppers, chopped	1½ cup	2 qts.
Onions, minced	¼ cup	1 cup
Paprika	2 tbsp.	1 oz.
Salt	1 oz.	5 ozs.
Salad oil or clarified chicken fat	1 qt.	5 qts.
Vinegar	1 pint	2½ qts.
Hard cooked eggs, chopped fine	8	3 doz.

Yield - 2 quarts plus, of dressing. Use 1 rounding tablespoon por serving.

Method:

1. Mix the spices together and add to the vinegar.
2. Add the vinegar mixture to the oil or clarified chicken fat beating with egg whip.
3. Add the mixed minced vegetables.
4. Chill thoroughly.
5. Beat hard to blend; add chopped eggs and serve with salad greens or sliced tomato salads.

SOME WAYS TO SAVE FATS!

1. Utilize every ounce of drippings and rendered fats for frying, seasoning, and shortening.

2. Use drippings quickly, as they become rancid. Keep drippings and clarified fats in refrigerator.

3. Trim off excess fats from roasts and fowl before they are cooked. Try out this fat **at** a low temperature in a trunnion kettle or top of large double boiler. Strain melted fat through fine sieve or cheesecloth. Store in clean, covered jars in the meat refrigerator.

4. Use the cracklings (the brown bits from tried-out fat) to flavor and shorten cornbread and muffins.

5. Pan fry foods instead of frying them in deep fat.

6. Drippings from ham, bacon, salt pork, and sausage may be used for seasoning vegetables and frying eggs and potatoes.

7. Chicken fat is good used in cream soups, sauces, and scalloped dishes.

8. Clarified fats may be used both in cooking and baking. Clarify fats by one of these methods:
   a. Heat soft fats slowly with sliced raw potatoes for 20 to 30 minutes. Strain through cheesecloth into clean tins.
   b. Add 1 pint of hot water to each pound of hard fats. Heat the mixture slowly for 15 to 20 minutes. Stir well. Strain through cheesecloth into clean metal containers. Chill for 12 to 24 hours. Remove the layer of hardened fat. Scrape off sediment from bottom. Rinse fat in cold water. Store in refrigerator.

9. Use hot bacon fat with seasoned vinegar to marinate "wilted" lettuce salad and also in hot potato salad.

10. Do not fry foods with fats at the "smoking" point. When fats smoke it is a sign of breakdown with the resulting development of unpleasant acrid flavors. Save fats by frying foods at the correct temperature.

11. Use clarified fats and chicken fat for shortening gingerbread, molasses cookies, and spice cakes.

★★★★

Post in your kitchen.

FLANLEY AND WOODWARD

Mabel G. Flanley Sally Woodward

551 Fifth Avenue, New York 17, N.Y.

Vanderbilt 6-3183

The WOMAN'S ANGLE *In Public Relations*

is on 352

Robinson

~~300~~

WOMEN'S BUREAU
MAY 6 1946
DEPARTMENT OF LABOR

May 1, 1946

Greetings:

At this particular time, when everyone is interested in the food supplies of the entire world, we believe you will find valuable the new series of bulletins that will come to you from the Grocery Manufacturers of America, Inc.

Entitled "The Life Line of America" these bulletins will bring you pertinent facts and information to illustrate the importance of every step in the long line from food in the field and stream to your table: the story of essential processes -- growing and harvesting, research, manufacturing or processing, packaging and labeling, transportation, warehousing, wholesale marketing and retail selling.

It is quite a story. Never before have any of us been so conscious of the miracle of the continuing movement of food that forms the Life Line of America -- that continuously keeps this country comparatively well-fed.

The Grocery Manufacturers of America, Inc. think that you and other opinion leaders should know, too, the stand of its members on issues of public concern. Therefore, these bulletins will from time to time bring you information of grocery manufacturers action on matters which affect the national economy and the public interest.

We hope you will find these bulletins valuable, not only for your own information, but for discussions and programs you may be planning on the food situation. If you have questions or need some specific information, please feel free to write us. We would be more than glad to hear from you.

Cordially,

Mabel Flanley

Mabel Flanley

MF:VB
enc.

The Life Line of America

THE LINE OF ESSENTIAL PROCESSES BETWEEN FOOD IN THE FIELD AND FOOD ON THE TABLE

● **For further information refer to**
FLANLEY AND WOODWARD
551 Fifth Avenue, New York 17, N. Y.

WOMEN'S BUREAU
MAY 6 1946
DEPARTMENT OF LABOR

Bulletin No. 1

May 1, 1946

FAVOR EXTENSION OF OPA

You know, as do all of the women of America who buy the groceries, what it would mean to you if all price controls were removed immediately. Therefore you will be interested in knowing the thinking of the Grocery Manufacturers of America on this important issue.

The Grocery Manufacturers of America, Inc. has about 300 members who produce a large proportion of the branded food and grocery products found in the grocery stores throughout the United States. In a poll of the membership, just completed, 73 per cent of the manufacturers replying voted to continue price control. This support for price control extension becomes all the more interesting when you consider that, in most instances, the manufacturers' price lists to the trade are the same today as they were in March 1942, when prices were frozen by the OPA.

Many of those who voted for extension of the price control act qualified their answer by suggesting amendments -- not amendments to cripple the efficiency of price control, but changes which would make the act more efficient in the control of inflation.

So while an overwhelming majority of the manufacturers favor the continuance of price controls under existing conditions they are also aware that the Price Control Act was hurriedly put together at the beginning of the war to meet the threat of inflation. Therefore they believe in some revision of the Act to meet the problems of today.

There have been some widespread misconceptions as to the position of grocery manufacturers on this subject. In order that the public can be better informed about their stand on this matter, the report of the poll of members was sent to the national presidents of the twenty-nine organizations who recently took official action in favor of extension of the OPA. You, too, may wish to pass this information on to interested groups in your own community.

We of the Grocery Manufacturers of America think that you and other public minded citizens should know the stand of our members on issues of public concern. It is with this feeling that we send you this bulletin.

You may be assured that we will keep you informed of any future action on all such matters which affect the national economy and the public interest.

We would like to take this opportunity to remind you that we are always interested in knowing the projects you are working on -- the action you are taking, so that we can serve you better. Write to us, often, won't you?

MONTHLY

INDUSTRIAL NUTRITION SERVICE

For employee publications, and individuals and groups promoting nutrition education

Production & Marketing Administration
150 Broadway, New York, 7, New York

March, 1946 No.17

To House Organ Editors: These articles may be included in your plant publication. Select those which will interest your readers.

FOOD NEWS

There'll be plenty of eggs, frying chickens, "tom" turkeys, canned citrus fruit juices and rolled oats in markets and on plant cafeteria counters during March. All these foods are good foods and good for you, so eat them often.

Fresh citrus fruits and potatoes will be in abundance in and near the growing areas. They may be plentiful in retail markets in other parts of the country, depending on the distance from the growing regions and on transportation facilities.

More Flour From Our Wheat

Many workers are wondering about the bread which will be made from the new wheat flour. The Government order, which went into effect March 1st, was issued to extract more flour from our available wheat supply. This will help us to send more wheat abroad to help feed those less fortunate than we. Eighty percent of the wheat grain will be used instead of 72 percent. The flour will be cream color instead of white, and as a result your breads and cakes will be slightly yellower in color. Yet the flavor and texture will be almost the same as before. The new flour may call for a few changes in home baking recipes.

The Eggs Have It...

Eat eggs in some form every day while they are plentiful. They are good for you and all members of your family because they add up in food value.

...Eggs are an excellent source of good quality protein, so necessary for growth and the building and repairing of tissues.

...Eggs have iron and phosphorus, two minerals so necessary in the daily diet.

...Eggs are a source of the Vitamins B_1 and B_2, Vitamin D, the "sunshine" vitamin and vitamin A, all necessary for good health.

There you have good reasons for eating at least one egg daily. Eat them for breakfast. Select them for lunch at the plant cafeteria. Choose egg salads, or a hot entree such as scrambled eggs, creamed or fried eggs, or egg omelet. For the sake of variety and good nutrition, choose an egg dessert such as custard, sponge cake, chiffon pie, custard, pumpkin, or cream pie with your mid-shift meal at least twice a week.

H-E-A-L-T-H N-O-T-E-S

A Lion or A Lamb?

Brisk March winds and sudden temperature changes remind us that we should continue to fortify ourselves against colds and other illnesses that accompany cold weather. Keep on your toes physically by doing everything you can to protect your health. Remember to eat the proper foods daily.

For physical well-being the year-round, include foods from every group of the Basic 7 in your diet every day. Don't forget that these groups are:

I. Green and yellow vegetables - at least one serving cooked or raw each day.

II. Citrus fruits or tomatoes and leafy green vegetables and raw cabbage - one serving of citrus fruit or tomatoes and a green salad (or cabbage slaw) each day.

III. Potatoes and other vegetables and fruits - include one or more servings of white and/or sweet potatoes and one or more servings of fruits and other vegetables.

IV. Milk and other dairy products - 1 pint of fluid milk or the equivalent in evaporated or dried milk, cheese, ice cream, or milk sherbets.

V. Meats, fish, poultry, eggs, cheese, dry beans and peas - one or more servings each day.

VI. Whole-grain or enriched cereals and bread - 3 slices or more of whole-grain or enriched bread and one serving of whole-grain cereal each day.

H-E-A-L-T-H N-O-T-E-S (Continued)

A Lion Or A Lamb? (continued)

VII. Butter or vitamin A fortified margarine - at least one serving per day or better - 1 pat at each meal, when it is available.

F-O-O-D O-N T-H-E J-O-B H-E-R-E A-N-D T-H-E-R-E

Workers in a Long Island plant have a daily reminder that fresh fruit is a good addition to their daily diet. As they enter their cafeteria the first thing to meet their eyes is a huge wooden bowl full of colorful fresh fruit, indirectly lighted from above. Orange, grapes, apples, and bananas, when they are available, are there to add vitamins to the workers' lunch. No wonder fresh fruit is such a popular dessert at this plant.

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MONTHLY

INDUSTRIAL NUTRITION SERVICE

For employee publications, and individuals
and groups promoting nutrition education

U. S. DEPARTMENT OF AGRICULTURE

Production and Marketing Administrati
150 Broadway, New York 7, N. Y.

January, 1946 No. 15

> To House Organ Editors: These articles may be included in your plant publication. Select those which will interest your readers.

FOOD NEWS

Foods of the month

Oranges, grapefruit, breakfast cereals, eggs and wheat flour are abundant in January. Add them up and they make a good breakfast.

By the way, did you eat a good breakfast this morning? Or did you grab a bite and run for the bus? Too many of us are eat-and-runners. We just fail to allow the few extra minutes which a good breakfast requires. Too few of us begin to understand why a better breakfast is so important to our morale, our day-long efficiency, and to our safety.

Breakfast for safety

In an ordnance depot, 1,000 consecutive accidents were analyzed in 1943. The greatest number of these accidents occurred between 11 a.m. and noon. Little or no breakfast had been eaten by the workers who had the accidents.

Lowered efficiency on your job results when you have had an inadequate breakfast, or no breakfast at all. Increasing hunger during the morning hours leads to nervousness, lessened judgment, inattention to work, and fatigue. The "eleven o'clock log" means less efficiency and more accidents.

Start the day right

Between supper and breakfast there are at least 12 hours. Eight hours may be spent in sleeping, but it takes energy even for sleep, although not as much as for work. An average worker will use 500 calories of energy while sleeping, another 500 calories, in the waking hours between supper and breakfast. In the total of 1,000 calories in energy he has used about one-third of his daily requirement. Morning is the time for him to break his fast and refuel his body with the foods required to supply the energy he needs.

Don't breakfast like a bird

Dr. M. H. Manson, Medical Director of American Telephone and Telegraph Company, has written an article on breakfasts in which he states: "Breakfast can be something to wake up for as well as something to stay awake on....You can't have what modern living takes if you only prime your body with a cup of hot coffee in the morning...it's like opening furnace drafts without putting in any fuel."

Coffee is warming, comforting, and stimulating--but it takes plenty of nutritious food along with it to make a breakfast that will keep one at the peak until lunchtime.

What is a good breakfast?

Here's a pattern for a breakfast that you will enjoy and that will provide what your body needs:

What?	Basic 7 group	How Much?
Citrus fruit or tomato juice	2	4 oz. or more
Cereal (whole-grain or restored)	6	1 oz. dry weight
with milk	4	$\frac{1}{2}$ cup
Egg	5	1 or 2
Bread (whole-grain or enriched)	6	2 slices or more
Butter or fortified margarine	7	$\frac{1}{4}$ oz. (1 pat)
Beverage		

Why this breakfast is good

The breakfast pattern shown above provides one-fourth to one-third of your day's energy needs. It supplies the essential nutrients for body functions and repair. These are:

Citrus fruit or tomato juice rich in vitamin C. This vitamin is often lacking in the industrial worker's diet. If we don't eat citrus fruit for breakfast it is difficult to include enough vitamin C in the other meals. Citrus fruits or tomato juice are a breakfast "must."

Eggs furnish iron for hemoglobin of the blood, vitamins A and B, and provide an exellent quality protein for body tissues.

Cereal and breadstuffs supply needed energy. Use whole-grain or enriched cereals, flour and bread for additional minerals and vitamins.

Milk is the best food source of calcium for strong teeth and bones. It supplies vitamin B_2 (riboflavin.) Use it generously on your cereal and drink it as a beverage.

Butter and fortified margarine supply vitamin A and make the breakfast toast and breads taste good.

When you add bacon, ham, or sausage to this breakfast pattern, you add favorite foods high in fat which gives "staying" power because fats digest slowly.

HEALTH HINTS

Health authorities agree unanimously that a better breakfast means better health. In an article entitled Starting the Day Right, Robert S. Goodhart, Surgeon (R) USPHS, Chief of the Industrial Feeding Division, Production and Marketing Administration, U. S. Department of Agriculture, explains that with an adequate breakfast an employee is bound to be a better worker and a happier, healthier individual. Dr. Goodhart says: "Great strides have been made in arousing public interest in better balanced meals, but much work remains to be done. In particular, this business of breakfast needs more and continuous emphasis if the three-part job of improving worker health, lowering accident rates, and raising efficiency is to be brought to a higher degree of success."

Scientists have been working on better food for industrial workers. The findings were recently published in "The Nutrition of Industrial Workers", Second Report of the Committee on Nutrition of Industrial Workers, Food and Nutrition Board, National Research Council, Washington, D. C. Problems being studied by the Committee include:

1) Food needs of workers in different industries.
2) Ways of conserving food nutrients in large quantity cookery.
3) The value of vitamin-fortified foods.
4) Ways of informing workers of scientific developments in nutrition.

TAKE HOME IDEAS

One way to see that all members of the family get a good, adequate breakfast is to allow enough time. Neither children nor grown-ups should grab a bite and run. Only 15 minutes need be set aside for a good breakfast--one that gives much greater return to grown-ups and children alike than a few extra minutes in bed.

Remember that a breakfast of orange juice and black coffee doesn't keep you slim. Hunger will slow down your pace by mid-morning and you are likely to eat a lunch which will more than make up for calories saved. Nervousness and irritability due to hunger can take a toll, too. So, to that fruit juice and coffee breakfast, add an egg, a slice of whole-wheat toast or a bowl of cereal with milk for a nutritious, low-calorie breakfast with staying power.

Turkeys are plentiful

Half turkeys are available in many markets. Here's how to roast them:

1. Remove pin feathers, singe, and wash thoroughly.
2. Draw the skin closely over the breast meat. Tie the leg to the tail.
3. Rub the bird lightly with salt. Cover with a clean cloth which has been dipped in melted fat.
4. Roast at a constant temperature of 300° F. for $1\frac{1}{2}$ to 2 hours or until about half done.
5. Allow 1 cupful of stuffing for each pound of turkey. Heap the stuffing on a piece of wax paper, lay in the roasting pan and cover with the turkey.
6. Recover the turkey with the greased cloth and continue cooking until tender. Allow 25 to 30 minutes per pound total cooking time.
7. Place the turkey on a heated serving platter, and serve the stuffing in a separate dish.

FOOD-ON-THE-JOB HERE AND THERE

A small optical equipment plant in Hollywood where work demands keen eyesight, steady hands and nerves, and dexterity, provides its employees with a well-balanced lunch at low cost. The lunch consists of meat, vegetables, dessert, and a beverage and is varied each day. Ninety-eight percent of the workers patronize the cheerful, home-like cafeteria.

Mill workers at Southern States Cooperative's cafeteria in Baltimore select more nutritious lunches than office workers. Here, too, good nutritious food is offered at low cost.

Desk workers, were you sleepy and tired yesterday afternoon because you didn't eat a good lunch? Check up on the eating habits of the office "grouse." More than likely a scanty breakfast, or no breakfast at all is the cause of the irritability. Poor eating habits just do not pay!

School Lunch at the Factory

E. Z. Mills of Benington, Vermont has recently added a personal touch to cafeteria service by allowing children of workers to join their mothers in a nutritious noon meal at the plant cafeteria. Children eat at half price. For twenty cents they get meat, potato, vegetable or salad, dessert, and beverage. In addition to increasing the service to the employee, this represents an important step in educating children to the proper dietary habits, for the only available food at the plant is a well balanced meal.

Information Please

To improve its cafeteria food service, Kimble Glass Company, Vineland, New Jersey conducted a survey of employee reaction to its method of in-plant feeding. Results of the questionnaire showed that almost all of the cafeteria users felt that the price of food was reasonable, that quality of food was satisfactory, food service as prompt as could be expected under wartime conditions. Steak with onions led as the favorite dish with roast chicken, fried chicken and roast beef as runners up. Vegetable and lima beans were the favorite soups. Kimble Cafeteria menus are made more attractive and interesting by the inclusion of a picture of a well known factory scene at the top of each day's food listing.

New In-Plant Feeding Services

M & M Limited, Newark, New Jersey

OCCUPATIONS & INDUSTRIES

See EMPLOYMENT OF WOMEN
HUMAN INTEREST STORIES

Suggestions for Covers
Showing
Necessary Civilian Jobs for Women

Agriculture

- Canning plant worker
- Farm worker
  - Dairy work (bottlers, washers, laboratory workers)
  - Fruit picker
  - Poultry farm
  - Truck farm
- Lu-a-2 Lumber worker
- Meat Packing plant worker

✓ Poultry – FOE-a-16
✓ Truck – FOE-a-5

Communications

- ? Radio technician – operators air-a-5 | ap-f-1 ap-b-1
- Telegraph messenger
- Telegraph operator
- Telephone operator
- Teletype operator

Education

- Child psychologist
- Librarian (magazine division)
- Nursery school attendant
- Playground supervisor
- School clerk or stenographer
- Social worker
- Teacher (magazine division)

Medical Care

- Clinic attendant
- Dental hygienist
- Dietitian
- Hospital attendant
- Laboratory technician
- Medical social workers
- ✓✓✓ Nurse (public health, hospital, industrial)
- Physiotherapist
- Receptionist, assistants in doctors' and dentists' offices

met-a-6 guard +
air-p-8 plant nation

Newspapers and Printing

- Journalist (editor or reporter)
- Linotype operator (magazine division)
- News photographer
- Proof reader

Restaurants, Cafeterias, Hotels, Boarding Houses

24a

Boarding house manager
Cafeteria counter attendant
Chambermaid
✓Chef - astor
Cleaner
Cook
Dietitian
Dishwasher
Hotel - Elevator operator
←Floor supervisor
Food buyer
Hotel housekeeper
Kitchen supervisor
Linen room supervisor
Room clerk
Service superintendent
Steward (house, floor, kitchen, pantry, silver)
Switchboard operator
Waitress

Retail Trade

Baker
Butcher
Department store clerk (older women - durable goods)
Drug store clerk
Grocery store woman (clerk, cashier or delivery)
Stock clerk
Wrapper

Service Trades

Carpenter
Clothes repair service
Electrician for repair and maintenance of household appliances and furnishings
Household worker
Laundry and dry cleaning
    Checker
    Delivery
    Dyer
    Hand Laundress
    Hand presser
    Inspector
    Machine presser
    Marker
    Measurer
    Sorter
    Spotter
Plumber
Seamstress
Tailor
Typewriter repair

Pub Utility

Technical Work

Technical Work

Chemist Several
Ch-a-8 ? Engineer in engineering and drafting dept
Industrial nutritionist
✓ ? Map maker - three-dimensional relief maps -

Transportation

Baggage clerk (at depot)
Bus driver Trans - c - 1
Commercial airport mechanic – Ap-c-4, and 7
Commercial plane dispatcher
✓ Conductor (on railroad, trolley✓, bus) Trans-a-3 and 2
✓ Delivery truck driver
? Engine wiper ~~– RR-b-8 – negro engine cleaners~~
Filling station attendant – oil - b - 12
Garage mechanic
? Information clerk - R. R - b - 9
Milk Truck driver
✓ Motorman on trolley
Oiler on railroad
Railroad track walker
? Section hand -(R. R - b - 11 Rail motor car pilot)
Stewardess on commercial plane
Taxi driver
Ticket taker at railroad station

✓ Switch tender – R. R - b - 13
✓ Trainman – R. R - b - 14
✓ Hostess RR - b - 16
✓ Watchman . R. R - c - 1

"White Collar" Worker

✓ Bank clerk and teller
✓ Bookkeeper
Cashier
✓ File Clerk
War Dept ② Stenographer (especially in industrial plants, government offices and public utilities)
? (U.S. Army off / Engineer Offs) Typist (especially in industrial plants, government offices and public utilities)

SUPERVISORY AND PERSONNEL

Miss Sara Southall, Supervisor of Women, Int'l. Harvester Co., Chicago, Ill.

Miss Dorothy Costello, supervisor of women, Int'l. Harvester Co., St. Paul, Minn.

Miss Anne Ketcham, Asst. Personnel Director, Central Service Division, Remington Arms, Bridgeport, Connecticut.

Miss Ruth I. Stone, Hawthorne Works, Western Electric Co., Inc. Chicago, Ill.

Mrs. ~~Miss~~ Loretta Boushey, Director of Personnel for Women in all plants, Monsanto Chemical Co., St. Louis, Mo.

Miss Ellen N. Davies, Personnel Mgr., Chase Brass & Copper Co., Waterbury, Conn.

Mrs. Marie Grubb, Supervisor of Women, Allison plant of General Motors, Indianapolis. Indiana.

Mrs. Josephine Gomon, Supervisor of Women, Willow Run Bomber Plant, Ford Motor Co., Detroit, Mich.

Mrs. Norma W. Hendren, Head of Industrial Relations work for women, Penna. Ordnance Works.

Miss Lucy Ogden Morton, Supervisor of Women, General Electric, Erie, Pa.

Miss Wilhemina Carver, Supervisor of Health, American Pulley Co., Phila. Pa.

Miss Alberta Johnson, Personnel Dept., Allis-Chalmers, Milwaukee, Wisc.

Mrs. H. T. Brooks, U. S. Cartridge Co., St. Louis, Mo.

Mrs. Rosalie Day, Welfare Dept., Twin Cities Ordnance, Minneapolis, Minn.

Mrs. Sara Sparks, Director of Personnel service and customer relations. Western Union Telegraph Co.

Miss Elizabeth Wege, Supervisor of Women, Bell Aircraft (also Niagara Falls Plant), Buffalo New York.

Miss Amy M. Aikin, Supervisor of Women, Axle Division, Eaton Mfg. Co., Cleveland, O.

Mrs. Elinore Herrick, Personnel Director, Todd Shipyard Corp., Brooklyn N Y.

Miss Phyllis H. Gandee, Public Relations Dept., Consolidated Aircraft Corp., San Diego, California.

Miss Maude E. Withers, Asst. Personnel Mgr., Iron Fireman Mfg. Co., Inc. Portland, Oregon

Miss Anne E. Frederiksen, in charge of women's personnel, Columbia Aircraft Industries, Inc., Portland, Oregon.

Mrs. Rose Washington, Women's Personnel Director, Bath Iron Works, (Augusta), Maine

Mrs. Phyllis St. Clair Fraser, Personnel supervisor for women, Todd-Bath Iron shipbuilding Corp., South Portland Shipbuilding Corp., Portland ,Maine.

Mrs. Mary W. Powell, Supervisor of Women, Brunswick Marine Construction Co., (shipbldg.) Brunswick, Georgia

SUPERVISORS AND PERSONNEL (continued)

Miss Irene Williams, Assistant for women Operations Personnel, Pantex Ordnance Plant
Amarillo, Texas.

Miss Marian M. Rau, Industrial Relations, United States Rubber Co., Charlotte Plant
Charlotte, North Carolina (ammunition)

Miss Mary G. Henricks, Personnel Director, United Tube Co., Ellwood City, Pa.

Mrs. Conway, Women's Counsellor, Personnel Dept. Winchester Repeater Arms,
New Haven, Conn.

Miss Helen Featherstone, Asst. Personnel Director, B.H. Aircraft Co.
Long Island City, N.Y.

Thompson Aircraft Products, Clevelnad, Ohio, now has 25 women for supervisors over women, also plans to have women personnel.

Parker Appliance Co. (Aircraft parts) has women for both supervisory and personnel
17325 Euclid Ave., Cleveland, Ohio.

For immediate release

U. S. DEPARTMENT OF LABOR
WOMEN'S BUREAU
Washington

USE OF WOMEN AS MAKERS OF WAR INSTRUMENTS STUDIED BY WOMEN'S BUREAU

More light on women's present and possible aid in production of war materials is cast by a report on instrument making just issued by Mary Anderson, Director of the Women's Bureau, U. S. Department of Labor.

The study covers representative factories making instruments for aircraft, for military medical units, for "fire control" (aiming and firing of guns, torpedoes and bombs) -- all such instruments being vital links in the Nation's war and defense efforts. Some of the instruments are of a secret character built for special naval and military requirements.

"To show how women can supplement, or even take the place of men if necessary, is the purpose of the study," Miss Anderson stated today.

"Women seem especially adaptable to this field. Instruments are relatively small in size, light in weight and composed of many intricate parts and assemblies. Many of the processes are of a painstaking nature, for which women have the patience and finger dexterity. Many industries have accepted as a truism the fact that women excel in work which requires great attention to detail. Less well known is women's ability to work to precise tolerances, often in ten-thousandths of an inch. Already both British and American women are displaying such skill.

"Despite traditions in the industry that certain highly skilled processes are monastically male, women trained for such jobs could prevent bottlenecks in instrument production."

A detailed analysis of occupation by sex in the 17 factories visited (located in New York, New Jersey, Pennsylvania, Illinois, and Minnesota) reveals those operations on which both men and women were found, those on which women were employed extensively, and those restricted to men. Opportunities for using more women on more jobs are specifically and fully discussed.

The proportion of women in the different plants visited varied from 50 percent down to 3 percent of the labor force. A few firms with large numbers of women found them satisfactory and made no mention of the disciplinary problems feared by other employers, some of whom also held to the theory, exploded in the last World War, that "women have no mechanical ability, interest, or aptitude."

Minimum hourly rates paid to women in instrument factories were found to range from 35 to 55 cents with 40 cents the most frequently reported. For men the range was from 40 cents to 61 cents with 55 cents the most common.

Information on the varying attitudes of plants as to willingness to employ women shows that those managements already employing considerable numbers on certain types of work recognize, with the prospect of male labor shortages, the need and value of training women for essential instrument-making skills for which they have special aptitudes.

"There now exists in some parts of this field a no-man's land in regard to occupations and sex", Miss Anderson declared. "This is due to the break-down of old jobs in instrument manufacture into many new processes, which are restricted by no traditions and are being done equally well by both men and women. These new jobs are the result of mass-production methods to provide more and more instruments to meet the greatly expanded need.

"Not only is there expansion of existing instrument factories, but the opening of new ones. Then contracts and subcontracts are being awarded to other factories convertible to instrument making."

As to the opinion advanced in some places that accidents to women would cause antagonism to management, the report states, "England has many examples of women setting up and operating machines, and working on all types of material. There the experience has been a decreasing accident rate on certain machines where women have replaced men."

Opportunities for women given the necessary training for certain operations that are applicable to the manufacture of instruments and small metals are discussed in detail. Some of the most obvious possibilities for more extensive employment of women include: Operation of such heavy machines as drill and punch presses, and milling machines, and of such light machines as those for turning, buffing, burnishing, burring, lapping, etc.; radium painting (done entirely by women in the 5 plants manufacturing aircraft instruments included in the survey), spray painting of instruments, touching up and brushing; graduating and engraving; inspecting, cleaning, wrapping for stock and shipment.

Also on special processes peculiar to the making of each type of instrument many more women could be used, according to the report.

In the making of aircraft instruments opportunity for greatly increased use of women looms large, though to date they have had only a minor role, it is pointed out. Prior to the defense program this field was restricted almost entirely to men. So far women's work has been confined largely to jobs of a light, repetitive nature, whether hand or machine work. As the industry expands women could do at least 75 percent of the assembly work needed in building up an instrument. Not only are they able to do the light subassemblies but also some of the final assemblies calling for a high degree of skill and responsibility, a thorough understanding of the use of the instrument being constructed, and a practical knowledge of the field for which the instrument is designed.

Though only 2 women in the factories visited were reported as final assemblers and all-round instrument makers, "Women might constitute a substantial part of such skilled assemblers if they had the training, experience, mechanical aptitude and interest, and, if the management were open-minded to the possibilities of employing them," it is revealed. British experience has proved this.

Also since women as well as men were found in some plants to be making various kinds of highly technical tests along with their assembly jobs, the report declares the proportion of women in such testing processes could be increased, were women trained or upgraded from instrument-assembly operation. For example, one management thought, in case of quantity production of one type of aircraft instrument, women could be trained in 3 to 6 weeks to do calibrating of some types of instruments.

Data on optical and "fire control" instruments tell a similar story as to employment of and demand for women. Because of the need of many times the usual output, specialization in jobs has become a necessity. Inexperienced workers are being trained, and a substantial proportion of women might be used.

In this country at present only a few women are used in polishing precision optics and single spindle blocking. Women's work in optics consists largely of centering, silvering, etching, cleaning, and inspecting. For most of these processes considerable skill is necessary.

Binoculars are the only fire control instrument on which women to date are employed extensively, the report discloses.

"The field of surgical and dental instruments, with the elimination of German competition and increase in defense orders for such equipment, has experienced a decided boom. For this industry, recently developed in the United States and with few skilled makers of such instruments available, workers have to be trained. Women have been taken on for various jobs, extensively for assembly and bench work on clinical thermometers. Also special machining of dental burs and broaches in about 150 styles is done almost exclusively by women. The proportion of women ccould be substantially increased on dental hand pieces and fittings," the report advises.

WOMEN ON WAR WORK

United Aircraft — (Pratt-Whitney) E. Hartford, Conn.

Colt's Arms — Hartford, Conn.

Scoville's Manufacturing Company.-- Waterbury, Conn. (Miss Millicent Pond)

Wright's Aeronautical — Paterson, N. J.

Bendix Aviation — Bendix, N. J.

Goodyear Rubber Co. — Akron, Ohio

Ravenna Ordnance (Hercules Powder Co., Ravenna, Ohio) Miss Day
(Women are being trained)

Remington Arms — Bridgeport, Conn.

Picktinny Arsenal -- Dover, N. J.

Frankford Arsenal -- (Frankford), Philadelphia

Sperry Gyroscope Co. -- Brooklyn, N. Y.

HUMAN INTEREST STORIES OF WOMEN WAR WORKERS IN ST. LOUIS

General Steel Castings:

I

A woman, 47 years old, white
Length of employment: 2-1/2 years
Job: Shoveling and wheeling sand and separating steel rods in the sand pit

Working Conditions: Very bad because of the dust and dirt. In the winter this part of the steel mill cannot be heated adequately. The company had difficulty in keeping even Negro men on the job in normal times.

This woman, who need not work because her husband has a good job, is on the job every day and never loses any time. She says that no job is too hard for her or too dirty because her three boys are fighting in the Navy and doing any job assigned to them.

II

A Negro woman, 39 years old, widow with 9 children

She has one boy in the Army and two daughters are now working. She says the "big children help take care of the little ones". Her husband was a former employee at the steel mill so she was one of the first women taken on after the war started.

Her job is in the fan system, laboring work. She started working with a pick but now has a better job.

In addition to supporting her big family she is buying a home. Her record on attendance and efficiency has been very good.

III

A woman, white, about 35 years old and one of the first women taken on in the steel mill.

Job: Chisel grinder. Her husband, who died just last week, was an invalid for 10 years. She has supported the three children, taken care of her invalid husband and has done the house work including the laundry. She has been one of the most faithful workers in the plant and is very seldom absent. She changes shifts along with the other workers every week. Before working in the steel mill she worked in a grocery store.

Wagner Electric:

A woman, white, 50 years old, with two sons in the service and one daughter in the WAC.

She left her home to take a job not because she needed the money but to help out in the war effort. She is a piston washing machine operator, but has proved to be such a fine all around worker that she is used in many different departments. Her attendance record has been excellent.

NOTE: They are now emphasizing perfect attendance of workers rather than high rate of absenteeism. At present they have 120 women who have been neither late nor absent thus far this year. One of the women workers, 52 years old, has a perfect attendance record for over two years.

Curtiss-Wright:

I

A woman worker, white, press operator, supports 9 children and an invalid brother. Her husband left her. Her brother takes care of the children. She is one of the best operators.

II

Assembler and Riveter: A woman, white, supports four children, drives 35 miles to work. In addition she raises pigs, cows and chickens.

U. S. Cartridge:

Woman worker, about 45 years of age, is the mother of 8 children, only one of which is now living. She had two sons killed while serving in the Navy. She has a daughter of high school age who is now recovering from an accident which necessitated the use of a cast. She will have to wear this cast for about five months.

This woman is doing a man's job -- loading and unloading box cars filled with boxes of 30 and 50 caliber cartridges weighing from 12 pounds to 240 pounds. She has been employed by the U. S. Cartridge Company for two years. She has suffered several accidents in the plant, the last one being in January 1945, when a number of boxes fell on her resulting in hospitalization for three weeks.

WOMEN'S BUREAU
APR 11 1945
DEPARTMENT OF LABOR

MANUFACTURE

CALIFORNIA

350 women are doing men's work and getting men's wages in the Vultee Aircraft plant at Downey. They work on 30 different types of direct production jobs, including putting together small subassemblies, operating light rivet guns, drill presses, paint sprays, and the installation of fittings and equipment in fuselages on the power assembly line. Men who gave up jobs to them in aluminum welding and lathe operation were released for heavier work. (Christian Science Monitor, October 7, 1941.)

The average wage for women is 70½ cents an hour, the same wage for men doing similar work. About two-thirds of the women are married and about 60% of these have children. (Washington Star, September 27, 1941.)

"Several large plants were visited by the Division of Industrial Welfare to determine what work is being done by women. It has been the practice for several years to employ women as power machine operators in the making of fabric coverings for wings, but with the speed up of production on account of defense needs, women are now employed as drill press operators, burrers, filers, punch operators, in the assembly of small parts, light welding and bending of tubes, soldering, spot welding, painting, attaching small parts, radio and electrical installation, connecting wires in conduit boxes, masking and spray gun painting.

The women are doing the same work as the men and are employed at the same wage. Some plants require previous experience, generally in electrical, radio, and battery assembly work".
(Report of the Division of Industrial Welfare of the Department of Industrial Relations, State of California, August, 1941.)

Aircraft: 20 in Vultee to assemble small electrical and mechanical parts (all those engaged have experience in assembling.) (February) Employment Service Report.

CONNECTICUT

Ensign-Bickford Company, Fuse manufacturers, Simsbury Substituting women for men is new so can't tell results yet. In last two years increased male employment 22.7 percent, female, 42 percent. 1/ (Letters sent by OPM to defense contractors)

Winchester Arms expects to employ 200 as inspectors. (May) Employment Service Report.

CONNNECTICUT continued (MANUFACTURE)

A Connecticut factory after a trial of women to load conveyers to annealing ovens, is now planning to add another shift of women loaders. Another firm is employing a shift of women solderers. Still another expects to employ 200 women inspectors to replace men. 1/

ILLINOIS

As buffers, and other work in metal plants where women formerly were not employed. (May) Employment Service Report.

For punch press work and spot welding in a metal toy factory. (May)

INDIANA

A company producing automobile parts is hiring women to replact men Selected for military service. (New York Times, October 13, 1941.)

MAINE

A textile machinery manufacturing company is using women in its machine shop and reporting that their work compares with that of men. (New York Times, October 13, 1941.)

MARYLAND

The Fairchild Engine and Airplane Corporation has hired 24 women aged 20 to 52 years in their Hagerstown plant, jobs customarily done by men. They are working in the manufacture of sheet metal parts, in sheet metal assembly and metal riveting, on drill presses, and on needlework, 35 more are in training. By late winter the number is expected to be over 200. (Baltimore Sun, September 28, 1941.)

The Baltimore employment office reports that one firm hired anumber of women for a shipping department when men were not available; another took several women to replace men on light machine work. There are cases where men secretaries and clerks have been replaced by women and theatres are using women ushers because of shortage of men. (Baltimore Evening Sun, April 29, 1941)

MASSACHUSETTS

Waltham Watch: hair spring department, on jobs after being highly simplified (February)

MICHIGAN

A Hillsdale plant expects to hire girl inspectors for work on airplane motor parts. Representatives of a Detroit firm have announced a plan for the future replacement of men with women in about 200 inspector jobs. (Labor Market Report for Michigan, May 11-July 1, 1941.)

As cutters and clipping machine operators, first time in this plant. Reported to be producing far beyond expectation, through work formerly thought too heavy. (February)

NEW JERSEY

Packing department of a large plant (type not specified.) (February)

Danville reports increased hiring of women in shoe plants to replace men who are leaving for higher pay and steadier work in defense industries. 1/ (Labor Market Developments, June 1941)

An Auburn employer has indicated that he may hire women for punch press and small lathe operations which have been usually performed by men. 1/ (Labor market Developments, June 1941)

PENNSYLVANIA

A firm in Philadelphia making batteries is hiring girls in the blue print room to prepare plates, do the typing on blueprints, and other work. This work used to be done by young engineers, men from college who were learning the business from the bottom up. The men started at $85 a month with rapid increases. Girls taking their place are paid $60 to $65 a month with no advances. 2/ (Report of Local YWCA)

In textiles. (May) Women reported as replacing men. (Employment Service Report)

RHODE ISLAND

A check on manufacturers of machine tools and gages for defense shows that in some instances women are being hired to operate milling machines and drill presses, when employers were unable to find men. Some gasoline dealers have found it necessary to employ women to sell gas and oil. (Report from R. I. Department of Labor.)

The Federal Products Co. in Providence is employing women for the first time, 35 out of a total of 500 employees. Work formerly done by men has been broken down into a number of processes to be done by women. The men thus released are advanced to other work. (P. Even. Bul., July 28, 1941)

WISCONSIN

A tanning company at Fond du Lac is employing 125 or more women in jobs formerly held by men.

ILLINOIS continued (MANUFACTURE)

A typewriter company needs women experienced on punch and drill presses to replace emn who will be transferred to production of small fuses. 1/ (P.35) Labor Market Development, October 1941

A furniture film recently hired and trained 20 women in machine shop and assembly work formerly done by men. Other instances are reported (no details.) Some employers are reluctant to hire women perhaps because of legal restrictions on hours. 1/ (P. 39) Labor Market Development, October 1941

LOUISIANA

A Shreveport electric motor co. is using women as armature winders for the first time. (Cincinnati Post, Jan, 1, 1942)

NEW JERSEY

Plants in Essex County producing war materials plan to hire women to replace men called to the service according to a survey made by the State Employment Service. In Newark alone, 46 out of 160 plants plan to employ women wherever possible to replace men. Many are preparing to train them, others will rely on the State for training. The 46 plants will need about 2,800 women. Among the plants reporting, the Oiljak Manufacturing Co. in Montclair could use women in assembly, on punch and drill presses, making bomb parts; the Farrand Foundry, Bloomfield, on light core making; the Newark Porcelain Enameling Co. on hand brushing. Other plants not specifying jobs are: Viking Tool and Machine Co. , American Can, Brewster Aeronautical Corporation, Multi-Products Co., Worthington Gamen Motor Co. (Newark Evening News, Dec. 19, 1941)

WHOLESALE and RETAIL SERVICES

MAINE

As clerks in stores, and other types of employment, as in the World War.(May) Women reported as replacing men (Employment Service Report.)

MARYLAND

A filing station near Baltimore HAS hired 5 girls to serve gas, oil and water, after losing several men by draft. (Baltimore Sun, April 26, 1941.)

MICHIGAN

In Detroit about 30 women are working for the Fuller Brush Company in door to door selling. The branch manager says that the women are outselling the men in many cases and that some of the star salesmen make as high as $100 a week. Eight girls have been hired as drivers by the La Salle Cab Co. The Detroit Bank has taken to using girls as junior bank clerks in its branches. It takes four to six months for training. (Detroit Free Press, September 21, 1941.)

NORTH CAROLINA

In Charlotte a large grocery chain sought the aid of the Employment Service in finding women for jobs as package checkers, jobs formerly done by men. The use of women as soda dispensers is becoming commonplace in Charlotte, and a number of firms have requested the Employment Office to supply women for office work formerly handled by men. One ice cream firm hired a woman last week for the first time. According to the manager of the Charlotte Employment Offict, The trend toward hiring women is already definite enough to indicate that greater facilities will be needed to care for the children of women workers. (Charlotte Observer, September 26, 1941.)

PENNSYLVANIA

A Philadelphia service station has employed 6 young women to serve gas and oil and keep records. (N. Y. Times, August 28, 1941.)

In Harrisburg women are employed to sell oil and gas in two service stations. (Harrisburg News, June 26, 1941.)

WHOLESALE and RETAIL SERVICES continued

UNITED STATES

Faced with increasing loss of male workers in retail food stores, various trade associations are assisting their members in setting up training programs for women workers. One of these is the Super Market Institute, which states that some of the women clerks are proving most helpful because fo their greater familiarity with planning and preparation of meals. (Domestic Commerce, July 3, 1941.)

A representative of Sears, Roebuck & Co. told the National Retail Dry Goods Association at their mid-year convention that department stores are hiring more women and High School graduates since the draft. Some stores are using women in departments in which only men had been employed previously. (Washington Star, June 3, 1941.)

The Fuller Brush Co. recently announced a new policy of hiring women to fill the gaps in its sales ranks. There are 12 of them now operating in Cleveland. (Business Week, June 14, 1941.)

ARKANSAS

WOMEN checkers at the front counters of "help yourself" grocery stores were tried briefly by one store about a year ago, but the attempt was abandoned when it was found that the women had difficulty lifting the heavy baskets of groceries to the checking counter. However, employes of at least half a dozen women checkers during the past three weeks have gotten around this difficulty by making use of younger "package" boys to hoist the heavy bundles.
Arkansas Democrat, Little Rock, Ark. November 30, 1941.)

Women who have always held a majority of the positions as store sales men in Little Rock are increasing their lead every day now as they are finding selling and office jobs available accessory and machinery businesses formerly using only masculine employes.
Little Rock, Ark. Democrat, November 30, 1941.

FINANCE, INSURANCE, and REAL ESTATE

MASSACHUSETTS

Girl pages have been hired by the First National Bank of Boston and the Old Colony Trust Company to fill vacancies left by messenger boys called into the armed forces or defense jobs. The girls will be given an opportunity to train for bank jobs as experts in typing, shorthand, bookkeeping and other posts. (American Banker, New York City, September 29, 1914.)

MISSOURI

In St.Louis an investment broker house is replacing boys with girls in the job of putting up figures. (Photograph St.Louis Star Times, September 20, 1941.)

NEW YORK

THE National City Bank, New York City, Faced with a shortage of young men for page and messenger service has turned to girls and now has 60 in training which will enable them in time to take on more responsible positions. (Christian Science Monitor, August 5, 1941.) Classes are helf from 8 to 9 a.m. and from 4:30 to 5:30 p.m. and attendance is voluntary. (N.Y. Herald Tribune, August 6, 1941.)

OREGON

Women will replace men as board markers in a Portland investment office. (Portland, Oregon Journal, August 15, 1941.)

ARKANSAS

Young women have also invaded the transit department of local banks where they are employed to sort, list, and classify checks in departments which formerly employed only young men, Recalling that out of a personnel of 115 young men, he had lost 10 men in as many months to the Army, the head of the Personnel Department in one of the city's leading banks revealed that he plans to fill any other transit department vacancies with women.

Possibility of employing women in the stock rooms where men were used exclusively is being "seriously considered" by heads of local variety stores. etc. (Arkansas Democrat, Little Rock, Ark. November 30, 1941.)

GOVERNMENT

Girls and young women between 18 and 25 are finding increasing employment in both government service and private industry because of a scarcity of boys and young men. Within a few days more than 100 girls were placed on such duty by Civil Service Commission at a salary of $1080 per year. More are expected to be hired.

Girls become messengers in Navy's Offices, Six replace boys gone with draft or into higher jobs. (Times Herald Washington, D C. 9/16/41

TRANSPORTATION, COMMUNICATION, and OTHER PUBLIC UTILITIES

ILLINOIS

A cold storage plant in Springfield has hired a woman book keeper TO replace 2 men called for military service. 1/

DISTRICT of COLUMBIA

Already Western Union and Postal Telegraph have a staff of 53 girl messengers who do "Block duty". They constitute about 10 percent of the messenger staff. At the beginning of the emergency about 10 percent of the messenger staff went with the National Guard, and many more were drafted. The firms decided to hire girls before jams developed. (Washington Star, October 4, 1941.)

MARYLAND

Experimental hiring of women taxi drivers by one company in Baltimore proved successful and more are being employed. Two more companies are hiring them for daytime hours. Their driving records are far superior to that of the average male applicant. (B. News, May 21, 1941)

WISCONSIN

In Milwaukee so many taxicab drivers are entering military service OR GOING TO other types of work that women drivers are being hired. (New York Times, October 13, 1941.)

NEW YORK

A taxi company in New York City is advertising for women drivers. (Baltimore Sun, July 8, 1941.) In Schenectady at least 2 women taxi drivers have been hired. (Schnectady Gazette, July 4, 1941.)

NEW YORK

40 women are now on maintenance work at LaGuardia Field, New York City, mainly painting luminous dials and cleaning spark plugs. Plans are under way to hire girls in the passenger reservations control department and in flight watch. One woman, hired as a secretary now directs landings and take-offs by radio. Transcontinental and Western Air Inc. states that its downtown traffic department 45 percent of the personnel are women, while 2 years ago only 5 women were employed. This company also employs the first woman meteorologist in its Los Angeles office and the first woman radio operator in Dayton. "We will continue to hire women in increasing numbers to replace men called to service. Wherever necessary we will hire women even in key positions if they are properly trained and qualified." (N.Y. Times, Jan. 19, 1942)

PERSONAL SERVICE

MICHIGAN

A Lansing dry cleaning establishment has three girls driving delivery trucks to replace drafted men. A Bakery company is experimenting with women drivers. (Lansing State-Normal, April 20, 1941.)

OHIO

Women are now being trained to do men's work in a Cleveland dry-cleaning establishment. This includes heavier cleaning and pressing. (Cleveland Press, June 9, 1941.)

NEW YORK

The Astor Hotel, N.Y. City, has hired 2 women as elevator operators to replace men called to army. (N.Y. Times, Jan.7,1942

KANSAS

Slight tendency in service industries, which may spread to other occupations . (May - Emp. Service Report)

SEVERAL INDUSTRIES or occ. reported in 1 clipping

UNITED STATES

A survey of super markets show a marked trend toward the hiring of women as clerks and cashiers. Of those answering only 19 percent had never employed women and only 7 percent found them unsatisfactoy. 66 percent were in defense areas and 72 percent were having difficulty getting workers. 80 percent were employing women. (Journal of Commerce, N. Y. city, Dec., 12, 1941)

The CAA is considering the practicability of training women as radio and teletype operators to replace men who may go into the armed force. Men will continue to receive preference for these positions as long as available. (Missoula, Montana Missoulian, Dec. 23, 1941)

ARIZONA

There is reported an increasing difficulty in recruiting help for restaurants and hotels. The State Employment Service is trying to get employers to relax experience requirements and to employ women. (Labor Market Development, Nov., 1941 - p.85)

GULF REGION(ALABAMA, LOUISIANA, MISSISSIPPI, TEXAS)

Employers are offering higher starting wages to clerical and sales workers and are willing to fill with women many openings formerly held men, such as theater ushers and stock clerks.(Labor Market Development, Nov., 1941 - pp-52-53)

CONNECTICUT

Women a re being hired in service and sales occupations and to some extent are replacing men in the low-paying industries, such as textiles. (Labor Market Development , July, 1941)

In restaurants, stores, offices, on light machine work, as inspectors, in an arms plant, and insurance companies.(Feb. Emp. Service Report)

INDUSTRY NOT REPORTED

FLORIDA

The hiring of women to replace men who have been drafted is increasing (Labor Ma rket Development, May 1941)

OHIO

An increasing tendency to hire women , and their employment to replace men. (Emp. Service Report -Feb.)

UNITED STATES

In general stringent labor conditions are resulting in the employment of women in many jobs heretofore exclusively held by men. This situation is reported to some extent in New England, the Middle Atlantic States, The Great Lakes and South West Regions. (Labor Market Development, July, 1941)

ILLINOIS

Striking tendency to employ women .(May)?

CALIFORNIA

Because of shortage of men, the public employment service has been asked to prepare a list of available women for the canteens at Ft. Lewis. (Labor Market Development, Nov. 1941)

MICHIGAN

State and local governments are faced with drastically changed personnel problems because of war. Among other changes, more women will be hired and possibly some positions open to them for the first time (Detroit News, Dec. 14, 1941

U. S. DEPARTMENT OF LABOR
WOMEN'S BUREAU
Washington

Women in Ohio War Industries

The principal woman-employing war industries in Ohio are the aircraft and parts industry, and ordnance manufacturing. The latter includes shell loading, the manufacture of artillery components, cartridges, tanks, tank parts, gun mounts, etc.

Ohio has been very slow in taking on women in these industries but now there is a notable increase in job opportunities for women, even a scarcity of women workers in the Ravenna, Akron and Youngstown region. Many plants that have not previously employed women are now providing facilities for their employment.

It has been estimated that when the war industries have reached their peak production and the anticipated number of men have been inducted into the service, over twice as many women will be needed in the war industries as were employed in the manufacturing industries at the time of the 1940 census, and at least half of these will have to be trained.

Aircraft and Parts Industry

New plant construction and conversion programs have been one of the outstanding industrial developments in Ohio in the past few months.

In number of plants, many formerly making automobiles and electrical equipment will begin large-scale hiring when conversion to production of airplane parts is completed. Up to now, relatively few women have been employed in this industry; three of the large plants are now employing less than 1000 women. However, more than half of the thousands of new workers to be added by these firms will be women.

As many as 50,000 additional workers will be required by this industry within the year, and more than half of these employees will be women.

Ordnance

The ordnance industry is also undergoing further expansion. Large new plants are being built, those already in operation are expanding rapidly, and other plants are being converted for the manufacture of ordnance products. Over 40,000 new workers will be taken on this year, and one half or more will be women. Cleveland now employing about 1000 women in this industry plans to triple the number of women on their payrolls during the next six months, and other plants not now employing women will hire them in large numbers. One large new plant being built in the state plans to employ about 10,000 women.

In the Cleveland Ordnance District in March, 314 women were employed on its inspection staff. By the end of 1942, the Ordnance Office expects that 50-60 percent of its inspectors will be women. They receive the same training as the men.

Rubber

In most cases, the opportunity of released rubber workers for re-employment is very good, as rubber companies are requiring large numbers of workers for their new ordnance and aircraft department, and there is a tendency to hire women wherever possible. Over 8,000 women were employed in the rubber industry in Akron in July, 1941, and the larger woman-employing plants now have war contracts that will require many more workers. The rubber industry in general has been reconciled to the fact that experienced workers are no longer available and they see the need for training inexperienced workers and hiring women to an increasing degree.

Rubber companies are accustomed to making quick changes in production and for that reason were able to transfer to war production more readily than most industries. The companies have branched out more and more into non-rubber production and employment now is definitely on the up-swing. Those persons who were temporarily laid off have been or are being recalled, and no further large lay-offs due to curtailment of rubber are anticipated because of rapid conversion to war items other than rubber.

ARROW

WOMEN'S BUREAU
U. S. DEPARTMENT OF LABOR

WOMEN'S SKILLS

HELP TO SPEED UP

WAR PRODUCTION

PANEL I.

CRITICAL MATERIALS AND VITAL PARTS

I. a. Inspecting tin plate

II.b. Cutting aluminum for aircraft

III.c. Testing steel pieces

IV.d. Checking copper plating

V. e. Cutting metal parts for shell fuses.

VI.f. Inspecting airplane rivets

PANEL II

WINGS -- WHEELS -- KEELS OF WAR

II-a. Sewing fabric on airplane wings

II-b. Sculpturing tire models

II-c. Making a ship model

II-d. Trimming aluminum tank treads

II-e. Riveting a bomber fuselage

II-f. Assembling an airplane engine

PANEL III.

WEAPONS AND MISSILS OF WAR

III. a. Checking antiaircraft guns to blue prints

III. b. Drilling parts for Garand rifles

III. c. Checking parts for aerial bombs

III. d. Inspecting shell cases

III. e. Gaging and weighing cartridges

III. f. Machining gun parts on a turret lathe

PANEL IV

UNIFORMS AND EQUIPMENT FOR ARMED FORCES

VI.a Weaving cloth for uniforms

VI b. Manufacturing of Army uniforms

VI.c. Making Laces for leggings and braids for caps

VI.d. Packing shoes for the troops

VI.e. Making Old Glory and signal flags

VI.f. Wrapping aluminum mess kits

PANEL V.

DEVICES TO GUIDE AND SAVE TROOPS

IV-a. Adjusting field glasses

IV-b. Examining parts of aircraft instruments

IV-c. Working on radio frequency units

IV-d. Assembling parachute flare casings

IV-e. Attaching hose tubes to gas masks

IV-f. Finishing life rafts and flotation bags

PANEL VI.

LABORATORY TESTS AND SKILLS

V-a. Operating a tensile strength testing machine

Making chemical tests
V-b. /~~A chemist~~ in an aircraft plant

V-c. Calibrating volumetric glass

V-d. Drafting for an airport

V-e. Operating a spectrograph

V-f. Making a camouflaged shelter model.

Nyswander

Copy of Exhibit at War Production Exposition ~~Program~~

WAR PLANTS OF ALL CORPORATIONS WITH MORE THAN 50,000 EMPLOYEES

Name of Plants	Number of Plants	Number of Labor Management Committees
North American Aviation	4	4
Remington Arms	6	6
Western Electric	9	9
Curtiss-Wright	11	10
Chrysler	19	17
Westinghouse	39	34
Bethlehem Steel	35	29
International Harvester	23	19
United Aircraft	5	4
Todd Shipyards	13	10
General Electric	45	34
Alcoa	43	29
Glenn Martin	3	2
Douglas Aircraft	6	4
E. I. DuPont De Nemours & Co.	89	59
U. S. Rubber	17	11
Kaiser	17	10
Anaconda Copper	45	25
Bendix	27	13
Goodyear	15	7
Republic Steel	30	14
U. S. Steel	201	74
Firestone	9	3
General Motors Corporation	115	18
Ford	22	2
Lockheed	6	0
Consolidated-Vultee	3	0
Sperry	4	0

human interest

Human interest material

U. S. Department of Labor
WOMEN'S BUREAU
Washington

EXAMPLES OF WAR EFFORT OF AMERICAN WOMEN

1. A woman coppersmith worker for a dry dock company lives over 40 miles away from her job - gets up at 4:30 a.m. so as to get to work on time.

2. A young woman of Central European ancestry, worked in a machine gun plant assembling two parts of rear gun sights - a tedious, matching operation which took a man almost two minutes to complete. After a month she showed her foreman how by gauging each part in advance, production could be jumped to two a minute, a 300 per cent increase.

3. Girls packing chemicals for expedition to North Africa worked with one arm in a sling due to burns, of which safety engineers had not then found the cause. Office stenographer volunteereed to help and all kept on the job to make the deadline.

4. Grandmother, 42 years old, operates 1700 ton keel bending machine - pulls levers as men who place keel in position give directions - raises or lowers or bends, "like driving 2 automobiles at once." Was a press operator before marriage, later a widow, with 3 children, worked again. Likes her war job.

5. A woman manipulates a precision machine in a war factory. Of Scottish origin, in World War I she drove a government equipment truck with bags of natural gas on the roof, for they had no gasoline - After the war she visited relatives in Chicago - married a "bonnie Chicagoan ." - "When this war came along, I just had to get into it," she says. "I feel that everybody who can help should do so - I have no children to give but I have my own ability to work and I am giving that gladly - that, and all I can spare for war bonds.'

6. Three girls of Chinese ancestry born in U. S. are making aircraft instruments - All have relatives in China fighting the Japanese. - Two are single, one is married. Her young husband who enlisted, her sister is a doctor in China, another is training for a nurse overseas, 2 cousins also are in American Army - so she decided to enter war work.

7. A middle-aged woman had nine children, including one son in the Navy. Had not worked outside her home in many years. She took a refresher course, when nurses asked older women to come back into service. Now in a leading New York hospital a greatly needed full-time staff nurse who is "good for a call any time of the day or night."

8. Women war workers cut down accidents through habits of neatness and order - One 36 year old, whose fingers drop tiny parts of a fuze into place, designed a rod to fit around the assembly bench to keep small parts from rolling onto the floor. "It not only keeps the place clean but it saves materials. We can't stop to pick up these little things if they fall to the floor. They get stepped on, meaning just that much material that much material that will never get to Berlin ot Tokyo."

9. Wife of a post office employee, with nephew a paratrooper, packs parachutes. She started as a seamstress, mending flying clothes and equipment. Fascinated by intricate folding of parachutes, she learned to do that job. Much strength is needed in fingers, hands and arms to clinch the folds of silk in the canvas case. It takes 45 minutes to 1 hour to pack a single parachute, and it has to be done only one way, the "right"way.

10. Women working on tanks had to learn their jobs between 2 a.m. and 8 a.m. when tools were available.

11. Women in many places work on any one of 3 eight-hour shifts - not only in war factories but on railroads, oiling engines, scrubbing coaches. An "upside down life" for those on the "swing" and "graveyard" shifts, that is, 3 to 11 p.m., and 11 p.m. to 7 a.m.

12. Hardly a year ago, building aircraft engines was almost exclusively the occupation of fathers husbands and brothers. Today it's a family matter. As in war-working generall whole families have turned out to do the jobs for which each member is best fitted. Some of these families work round the clock -- in several plants. Other families work on the same shift, on the same types of jobs, in the same plant.

There engine-building families include such groups as a mother and daughter who work at adjoining drills; two sisters who work at adjoining lathes; a father and son who are both lead-men on crankshaft lines in the assembly department; five in one family who work in as many different departments; a man and wife who work on the second and third shifts, respectively.

In the fivesome, George the father, works in spare parts packing; son John is in finished stores; Theresa, a daughter is a secretary; Mary, another daughter is a telephone operator; another son, James is a coremaker. Soon there will be but four, for son James is about to enter the Army.

In one plant, at adjoining sensitive drills, are two learners who went through preparatory vocational courses together, got the same high marks, wear their blue-visored workcaps at the same rakish angle. One is the mother, the other is her petite brunette daughter. They have an uncle and seven nephews in the armed services.

Sister combinations include a tall, blonde pair who work at neighboring engine lathes. One was a baby nurse before she went to work at aircraft engines, the other was a cook.

13. A war-conscious, patriotic woman runs her own barber shop. It is purely another case of a masculine field being taken over by a woman.

She incidentally gives free tonic to the service lads because "this is the time to help the men who are helping us." She has had more than one uniformed man smile gratefully and murmur:

"We wouldn't mind the fight if more folk were like you."

The late-hour, late-shift problem has been solved by this energetic young woman. She had watched the men come into her shop unshaven, tired after a hard day's work. She had heard them tell of going to four or five different shops, only to find that they had closed. She listened to them and thought out a solution. She stays open until the last defense worker has been served. She tells them to stop in the shop whenever they need a shave no matter how late the hour.

"After all," she comments, "that's the very least I can do. They have worked all day and half the night. Promptness in closing was all right in peacetime. But this is war and my shop is staying open, hours or no hours."

14. Sitting in a wheelchair, a forty-eight-year old Buffalo mother, inspects rivets in her home every day for an airplane plant as her contribution to America's war effort.

Convinced American airmen "are counting on us ... we've got to get into this thing and win." She sorts three pounds of rivets a day at 30 cents a pound on a glass-topped tea wagon. Then they are returned to the factory. She has heeded a wheelchair thr through eleven years of crippling arthritis and has never seen the warplane plant~~s~~.

"They fasten the plating onto the wings," she explains, "and in the pressure of work, the riveter can't be too careful, so the surplus rivets fly around like bird seed. They are swept up from the floor and I get my share. It is up to me to find out which can be used again and which are defective."

The factory has supplied her with a piece of cardboard to which are attached nineteen sample rivets with distinguishing characteristics sketched in ink beside each.

C576 4-42 200M COMP RM.

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CAREER FRONT NEWS

LIFE WOULD BE MORE ATTRACTIVE IF

- there were some sort of buzzing signal which would warn you, while you were talking on the phone, that another call was waiting
  Barbara Rich, New York, N. Y.
- the cords on venetian blinds had disks or knobs attached to indicate which is which. They could read, "to open," "to close," "to raise or lower"
  Mrs. J. Robinson, Louisville, Ky.
- we'd all keep an old toothbrush in our shoe-polishing kits to remove dirt from between the sole and the shoe
  Mrs. Otto Lee, Sioux Falls, S. D.
- hotels would furnish wash cloths
  Lenore Studt, Omaha, Nebraska
- all bread, coffee and similar perishables were dated so that one could see at a glance which should be used first
  Mrs. Daniel Constant, Odessa, Texas
- earrings came in 3's since they are so easily lost, and one is of little use
  Barbara Deak, Sinking Spring, Pa.
- large garbage cans were provided with rollers so they could be trundled instead of carried outside for emptying
  Bobbie Rucker, Louisville, Ky.
- all teapots and other cooking utensils had cup measurements marked inside
  Helen Sliwa, Cicero, Ill.
- milk bottles had non-drip tops
  Laura Roach, Wilmington, Del.
- *Send in your ideas on how to make life more attractive. Glamour will pay $1 for all those that merit publication*

FROM SOCIAL WORK TO TOP PERSONNEL JOB

MEET Mrs. Jean Shepard, Director of Executive Personnel at Lord & Taylor's department store in New York. She's the talent scout who picks potential executives for the store and develops them into upper-bracket material.

She holds one of today's top-flight personnel jobs, and if there's a formula to be found in her rise, it's this: Develop your tastes and aptitudes, apply them to your work, and they'll inevitably lead you on to bigger jobs.

Her career began in the field of psychiatric social work. Excelling in psychology at college, she won a scholarship to take more advanced studies, and she's been taking them ever since. But no theorist, she has alternated them with a variety of jobs that gave her sound practical experience.

She had a wide background of psychiatric social work behind her when Macy's department store offered her a job as counselor for maladjusted employees. At that time she was doing child guidance work in New York—and also polishing up on adult psychology, for to straighten out problem children she generally had to straighten out problem parents first.

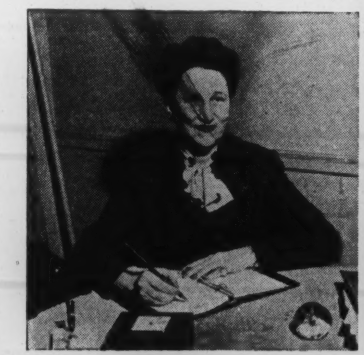
She accepted the Macy offer because it gave her a chance to explore new territory, to apply her psychology training in a business set-up. Within a short time she was head of Macy's Counsel Office. Employees distressed by personal or business problems beat a path to her door to find understanding and guidance. Mrs. Shepard, in turn, found her job supplying her with a detailed, all-over view of the department store business and its special problems.

Leaving Macy's six years ago, she took over her present job at Lord & Taylor, where she's in charge of selecting and training executive personnel. Formerly she toured colleges to pick out promising youngsters, but now she recruits most of her future executives from within the store. It's her job and joy to discover employees with special ability and to place them in departments where they'll develop best.

To get ahead in department store work, Mrs. Shepard has concluded, the best idea is to start in the selling ranks. The seller-customer relationship is the keystone on which the whole business is built. Whether you're aiming at buying, styling, personnel or the vice-presidency, sales experience is the important basic training.

For personnel work, she has another route to recommend—the secretarial. An alert secretary in a personnel office has an excellent chance to study personnel technique and eventually advance into that work.

The personnel worker must remember, says expert Mrs. Shepard, that her job can never become routine. She must always consider people as human beings, not as case numbers, and give each of them warm, individual attention. Even in the seemingly impersonal world of business, it's still the personal touch that counts.



JEAN SHEPARD

WOMEN WORKERS ARE THE CONCERN OF THE WOMEN'S BUREAU[1]

BY

MARY ANDERSON, DIRECTOR

WOMEN'S BUREAU, U.S. DEPARTMENT OF LABOR

The people of the United States are today facing a multitude of problems vitally related to the welfare of workers. The 11 million women workers, in a great variety of occupations, who either have jobs or are looking for jobs, share these problems that are common to all workers. The women employed in the United States must, in most cases, earn their own living. With them, as with men, a job is an economic necessity.

In addition to the problems common to all workers, women workers are confronted with special difficulties peculiar to their own sex. They are too often the victims of injustice and exploitation. Nor is the position of women in industry always properly understood. The fallacious notion that women's earnings are "pin money" is still widespread.

The particular function of safeguarding the interests of women workers is the duty of the Women's Bureau of the U. S. Department of Labor. The woman who makes candlewick bedspreads in her own southern mountain home for a pittance, the maid who toils for long hours in someone else's kitchen, the waitress who serves food to the public, the girl doing unskilled or semiskilled labor in a factory or mill, the woman whose health is endangered by insanitary working conditions or a hazardous occupation, the married woman responsible for the support of her children who is denied a job because of prejudice, the qualified Negro woman who is barred from this or that kind of employment because of her race--these are a few of the many types of women workers whose interests are the concern of the Women's Bureau.

The problems pertaining to wage-earning women are at present many and varied, requiring a wide range of activities by the bureau. The question of employment standards is always a paramount issue. During the 16 years of its existence the Women's Bureau has led the way in building up standards to increase the wages of thousands of poorly paid women, to shorten their hours of labor, to improve their working conditions, and to increase their efficiency. The breakdown of these standards caused by the prolonged depression led to greater demands upon the bureau and necessitated investigations to show the growth of sweatshops and to stress the need of suppressing this menace.

With the advent of the N. R. A. and the other recovery measures, much of the ground lost in the field of industrial standards has been regained. But despite the progress made towards Nation-wide uniform minimum-wage and maximum-hour standards, there is need for further improvement of labor conditions for women. The double wage standard with lower rates for women than for men still persists. Also, the evil of

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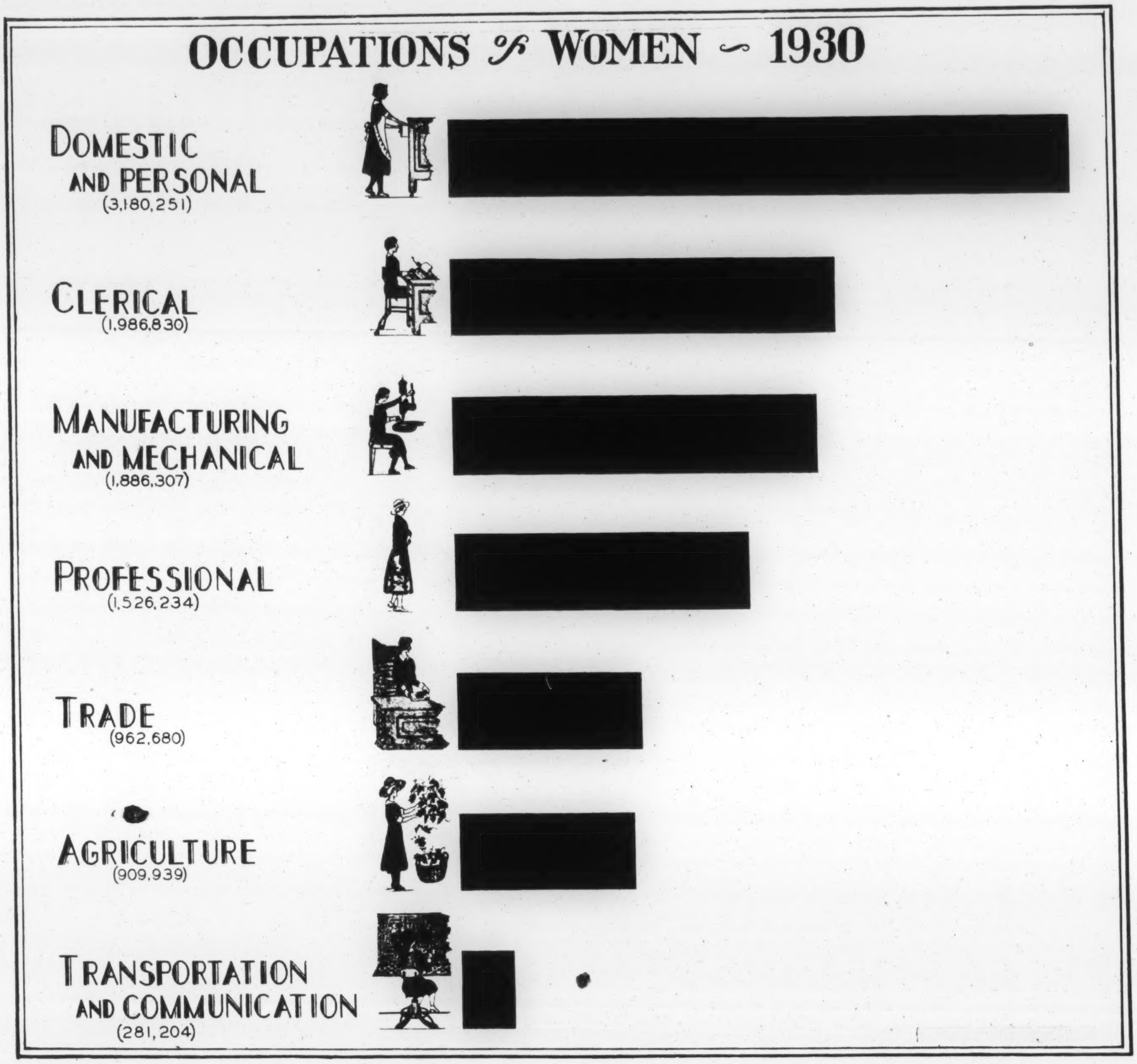
1/ Reprinted from Labor Information Bulletin, December 1934, a publication of the Bureau of Labor Statistics, U.S. Department of Labor.

industrial home work, though lessened by some code provisions, still flourishes in many quarters as a vicious system.

The bureau is primarily interested in women workers, both as individuals and as members of their trade-union organizations. Indirectly, however, the Women's Bureau aids wage-earning men through its efforts to keep selfish interests from exploiting women in the form of "cheap and docile labor" as unwilling competitors of men. Moreover, when constant stress on the needs of women workers leads to improved conditions these often mean gains for men as well. And whatever proves of advantage to the workers, in the final analysis spells benefits to industry and business, home and family, community and the nation.



The Women's Bureau serves as a clearing house for collecting and disseminating facts about women workers. Its investigations and reports are distributed free upon request. Graphic material in the form of posters, charts, and maps can be had for the asking. Other exhibits, including popular motion pictures, are lent to all willing to pay the nominal transportation charges.

Calif. Town Gets Woman Mail Carrier

?

SOUTH PASADENA, Calif., (U.P.).—Mrs. Emma F. Filkins, wife of Postal Clerk Glenn Filkins, has just been appointed by Postmaster George Hugh Banning to be the first woman mail carrier for this city. She had to qualify for a 10-to-15-mile daily route with an average mail load of 40 pounds. All California postoffices have lost heavily of their personnel to the armed forces, and while it is easy to find women mail clerks, Mrs. Pilkins is the first to join the carriers.

Monthly Labor Review Articles
on
Wartime Employment and Labor Supply
and Postwar Job Transfers

(Duplicate)

Serial No. R. 1691

[From the MONTHLY LABOR REVIEW (September 1944) of the Bureau of Labor Statistics, United States Department of Labor]

State Variations in War Migration and Post-War Demobilization[1]

Summary

THE largest domestic post-war problem is recognized to be that of providing employment. In preparing to meet this problem, estimates of wartime population shifts and of the post-war impact of military and industrial demobilization on the different States should prove helpful. Although the present study of the Bureau of Labor Statistics reaches no estimate of post-war unemployment, it does present material that may be useful in making such an estimate on a State, as well as on a National, basis.

The war years have brought a great increase in employment opportunity and extensive shifts in the geographic distribution of employment and its concentration in certain States, which has been reflected in an unparalleled interstate movement of population. Eighteen States and the District of Columbia have experienced a net in-migration during the war years, and 30 States, a net out-migration. Recent estimates of civilian migration by the Bureau of the Census indicate that, between April 1940 and November 1943, the Pacific region gained about 1¾ million persons through migration; more than 1.3 million of this centered in the State of California and nearly a quarter of a million in Washington. The East North Central States gained over half a million, with Michigan and Ohio each receiving more than a quarter of a million persons. The region suffering the heaviest population drain through out-migration was the West North Central States, but Arkansas, North Carolina, Kentucky, and Oklahoma each suffered a net out-migration of over a quarter of a million.

Comparison of the wartime changes in total population, by States, with changes during an equivalent period in the 1930–40 decade also reveals some striking differences. Thus, California had nearly 1.2 million persons more, and New York 256,000 persons less, than if the pre-war population changes had been repeated.

The hypothetical total of persons to be demobilized is 14.2 million—8.8 million from the armed forces and 5.4 million from the munitions industries. In some States (e. g., Michigan, Indiana, Ohio, Connecticut, Nevada, and the States on the Pacific Coast) the number of demobilized persons will be over 40 percent of total employment in 1940. There will be very nearly this many in New Jersey and Delaware. Even in most of the North Central, Northwestern, and

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[1] Prepared in the Bureau's Division of Post-War Labor Problems by Emile Benoit-Smullyan and Bettina G. Conant with assistance from Maxine T. Anderson. The article is, in part, a revision of two earlier articles: The Relative Severity of Post-War Demobilization by States (in the Monthly Labor Review, July 1943, pp. 1–4); and War Distortions and Postwar Demobilization: The Problems of the States (in State Government (Chicago), January 1944, pp. 255–259).

Southeastern States where the problem will be less severe, the demobilized persons will nevertheless total one-fifth to one-fourth of the prewar number of jobs. Two million persons are likely to be demobilized from a selected group of large Government-financed, privately operated war plants alone, and this group accounts for only about a half of the publicly financed war plants. In some States (Nevada, Kansas, Oklahoma) the number of manufacturing employees likely to be demobilized from this sample of Government-owned war plants is larger than the total employment in manufacturing in 1940. There are nine other States in which it is at least half as large.

The volume of unemployment to which the indicated volume of demobilization will give rise will be affected by the timing of military and of industrial demobilization, which will depend chiefly on military developments, and by the number and timing of voluntary withdrawals from the labor market, and the extent and rapidity of the expansion of production for nonmilitary uses, which will be substantially influenced by public policy.

War Migration

It is clear that the primary post-war problem of finding enough peacetime jobs to take the place of vanished wartime positions will be especially grave for those States that have experienced unusually large population increases. The problems of housing, sanitation, education, and law enforcement will be particularly severe in those areas where wartime provisions have been makeshift, temporary, and inadequate. The presence of large numbers of migrants will introduce elements of uncertainty and, possibly, of discord. On the other hand, wartime losses of population, if they prove permanent, will also have pronounced effects on State levels of income, taxes, relief expenditures, etc.

ABSOLUTE POPULATION CHANGES

Basic to any description of population changes by States is the fact that the total population of the Nation has increased sharply during the war years.[2] If only the civilian population is considered, this fact is obscured, and the size of problems to be faced by certain States after the war is unduly minimized. In the present study, therefore, members of the armed forces have been included in the population estimates for each State.

In the rapid expansion of population that occurred when large-scale Government expenditures on munitions led to present high levels of employment, the extraordinary national increase of 5½ million was very unevenly distributed among the States. Four States (California, Michigan, Ohio, and Texas) accounted for over half the total growth, whereas 18 States suffered an actual population decline (table 1). It seems clear that wartime population changes reflect, to an extraordinary degree, the influence of actual movement of population from one

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[2] References in this article to "the war years" or "wartime" are meant to cover the period from the beginning of the defense program in the spring of 1940, up to the latest date for which statistics on some of the key magnitudes are available—namely November 1943 or March 1944, depending on the circumstances.

State to another, in most cases in response to shifts in the distribution of economic opportunities.

NET CIVILIAN MIGRATION

Net civilian migration over any period may be derived by subtracting from the change in total population of each State its total excess of births over deaths. If the population increase for any State is less than its excess of births over deaths, the State may be said to have had a net out-migration, i. e., a larger number of persons moved out of the State than moved in. If the population increase is greater than the excess of births over deaths, the State has had a net in-migration.[3] For the United States as a whole, the separate totals of net in-migration and of net out-migration would be equal, except for net foreign immigration (i. e., immigration minus emigration), which increases the net in-migration of the States in which the immigrants take up residence without any corresponding increase in the net out-migration of any other State.

The net civilian migration by States during the period, April 1940–November 1943, is shown in table 1 and chart 1. The total volume of net out-migration for all States was 3,422,265, and the total volume of net in-migration was 305,112 more than this, reflecting the influence of national net immigration. In all, there was a net shift of population out of 30 States and into 18 other States and the District of Columbia. The predominant movement was away from the interior of the country and in the direction of both seaboards and of the industrialized Great Lakes region.

The Pacific region had a net in-migration of approximately 1,752,000. The comparable figure for the East North Central States was 556,000. There was a smaller net in-migration into the South Atlantic States of 130,000 and into New England of 120,000. The West North Central region suffered the heaviest population drain through out-migration—a net exodus of about 841,000. This was followed by the East South Central region with a net out-migration of 644,000, and by the West South Central with 564,000. Somewhat surprisingly, the highly industrialized Middle Atlantic States show a net out-migration of 150,000. Finally, the Mountain States suffered a migration drain of 54,000 of their relatively small population.

Among the States of population influx, California presents a very special problem, with a net in-migration of over 1.3 million, or nearly a third of the total net in-migration for the Nation. Michigan, Washington, Maryland, and Ohio follow with net in-migration of about a quarter of a million each. The District of Columbia had a net in-migration of 205,000, and five States (New Jersey, Florida, Oregon, Virginia, and Connecticut) gained between 125,000 and 187,000 each. Eight other States (Arizona, Indiana, Illinois, Massachusetts, Utah, Nevada, Rhode Island, and Delaware) had smaller amounts of net in-migration, ranging from 19,000 to 79,000.

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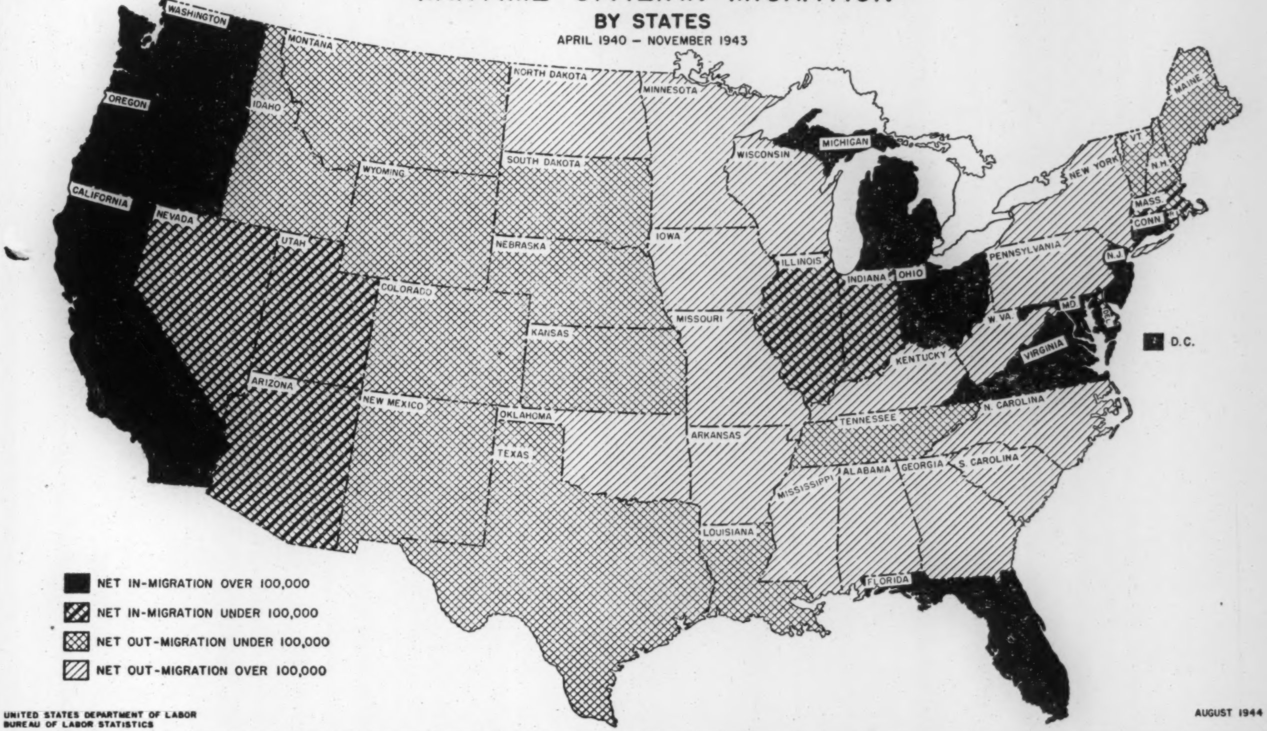
[3] Net in-migration is not the same as gross in-migration, which would include all in-migrants whether or not offset by out-migrants. Before the war, gross in-migration appears to have been several times as large as net in-migration in some States. During the war period, however, migration has involved less back-and-forth motion and has had to a greater extent the character of a one-way, and at least quasi permanent, shift of population.

CHART I

WARTIME CIVILIAN MIGRATION

BY STATES

APRIL 1940 – NOVEMBER 1943


WASHINGTON
OREGON
CALIFORNIA
NEVADA
IDAHO
MONTANA
UTAH
ARIZONA
WYOMING
COLORADO
NEW MEXICO
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
TEXAS
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN
MICHIGAN
ILLINOIS
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
S. CAROLINA
N. CAROLINA
VIRGINIA
W. VA.
MD
DEL.
N.J.
PENNSYLVANIA
NEW YORK
CONN
R.I.
MASS.
VT
N.H.
MAINE
D.C.
NET IN-MIGRATION OVER 100,000
NET IN-MIGRATION UNDER 100,000
NET OUT-MIGRATION UNDER 100,000
NET OUT-MIGRATION OVER 100,000

UNITED STATES DEPARTMENT OF LABOR
BUREAU OF LABOR STATISTICS

AUGUST 1944

TABLE 1.—*Wartime Population Change, and Civilian Migration, by States, April 1, 1940–November 1, 1943* [1]

State	Estimated change in total population [2]	Excess of births over deaths	Civilian migration		Civilian migration as percent of 1940 civilian population
			Net in-migration	Net out-migration	
United States	+5, 566, 698	5, 261, 586	[3] 3, 727, 377 [4] 305, 112	3, 422, 265	[4] +0. 2
Alabama	+71, 232	187, 598		116, 366	−4. 1
Arizona	+108, 663	32, 012	76, 651		+15. 4
Arkansas	−92, 974	132, 398		225, 372	−11. 6
California	+1, 592, 957	224, 386	1, 368, 571		+19. 9
Colorado	+22, 082	44, 841		22, 759	−2. 0
Connecticut	+181, 610	54, 188	127, 422		+7. 5
Delaware	+27, 525	8, 142	19, 383		+7. 3
District of Columbia	+227, 262	22, 011	205, 251		+31. 4
Florida	+266, 700	79, 956	186, 744		+9. 9
Georgia	+65, 405	196, 198		130, 793	−4. 2
Idaho	−16, 957	27, 932		44, 889	−8. 5
Illinois	+287, 369	218, 807	68, 562		+. 9
Indiana	+193, 762	114, 785	78, 977		+2. 3
Iowa	−106, 867	85, 717		192, 584	−7. 6
Kansas	+761	54, 900		54, 139	−3. 0
Kentucky	−109, 662	153, 014		262, 676	−9. 2
Louisiana	+126, 633	145, 666		19, 033	−. 8
Maine	−4, 632	25, 763		30, 395	−3. 6
Maryland	+305, 877	70, 498	235, 379		+13. 0
Massachusetts	+131, 684	94, 652	37, 032		+. 8
Michigan	+513, 237	232, 425	280, 812		+5. 3
Minnesota	−80, 226	111, 738		191, 964	−6. 9
Mississippi	−50, 457	143, 737		191, 194	−8. 9
Missouri	−4, 815	112, 101		116, 916	−3. 1
Montana	−46, 433	22, 579		69, 012	−12. 3
Nebraska	−55, 387	40, 907		96, 294	−7. 3
Nevada	+30, 996	4, 114	26, 882		+24. 4
New Hampshire	−639	11, 356		11, 995	−2. 4
New Jersey	+286, 219	101, 337	184, 882		+4. 4
New Mexico	−3, 536	40, 826		44, 362	−8. 3
New York	+65, 226	288, 196		222, 970	−1. 6
North Carolina	−10, 746	252, 087		262, 893	−7. 4
North Dakota	−68, 503	31, 927		100, 430	−15. 6
Ohio	+449, 823	218, 857	230, 966		+3. 3
Oklahoma	−183, 161	120, 381		303, 542	−13. 0
Oregon	+171, 635	33, 477	138, 158		+12. 7
Pennsylvania	+179, 679	292, 061		112, 382	−1. 1
Rhode Island	+47, 583	18, 105	29, 478		+4. 2
South Carolina	+12, 568	150, 496		137, 928	−7. 3
South Dakota	−62, 627	26, 486		89, 113	−13. 8
Tennessee	+102, 982	173, 825		70, 843	−2. 4
Texas	+350, 153	365, 853		15, 700	−. 2
Utah	+71, 482	39, 085	32, 397		+5. 9
Vermont	−20, 955	10, 452		31, 407	−8. 7
Virginia	+300, 233	145, 534	154, 699		+5. 8
Washington	+302, 667	57, 736	244, 931		+14. 1
West Virginia	−22, 849	116, 783		139, 632	−7. 3
Wisconsin	+9, 932	112, 786		102, 854	−3. 3
Wyoming	+4, 187	12, 875		8, 688	−3. 5

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[1] Source: Bureau of the Census, Release P–44, No. 17.

[2] Estimated civilian population, November 1, 1943, plus net loss (from civilian population) to armed forces between April 1, 1940, and November 1, 1943, minus estimated civilian population, April 1, 1940.

[3] This figure includes a net interstate migration of 3,422,265, plus a net immigration into the United States of 305,112.

[4] Net immigration into the United States.

Net out-migration was less than 100,000 in 14 States and more than this amount in 16 other States. Of the former group, 9 States (Idaho, New Mexico, Vermont, Maine, Colorado, Louisiana, Texas, New Hampshire, and Wyoming) had only 50,000 or fewer net out-migrants,[4] and 5 (Kansas, Tennessee, Montana, South Dakota, and Nebraska) had between 60,000 and 100,000. Of the 16 States where the net out-migration was more severe, 8 (Wisconsin, Missouri, Pennsylvania, Alabama, South Carolina, West Virginia, Georgia, and North Dakota) were within the 100,000 to 140,000 range; Iowa, Minnesota, and Mississippi had between 190,000 and 195,000; New York and Arkansas had about 225,000; and North Carolina, Kentucky, and Oklahoma had more than a quarter of a million.

If these changes are viewed on a relative basis, that is, in relation to the pre-war population, as shown in the last column of table 1, the significance of these population shifts, especially in the case of the less-populous States, is more clearly apparent. California gained about 1 migrant for every 5 persons residing in the State in 1940; the corresponding proportion for Nevada was nearly 1 to every 4, and for the District of Columbia 1 to every 3. Arizona, Florida, Maryland, Oregon, and Washington received net wartime in-migration equaling from 10 to 16 percent of their pre-war population. By contrast, Idaho, Kentucky, Mississippi, New Mexico, and Vermont lost almost a tenth, and Arkansas, Montana, North Dakota, Oklahoma, and South Dakota over a tenth, of their 1940 population as migrants to other States.

WARTIME AND PRE-WAR POPULATION CHANGES

As wartime population changes have supervened upon a pattern of change already in existence in the pre-war years, a comparison with pre-war changes is necessary if the changes specifically attributable to the economic effects of the war are to be isolated. A rough comparison of this sort is made in table 2, by relating the population changes in the 43 months following March 1940 to the average population changes in 43 months of the 1930–40 decade, i. e., to 36 percent of the total population change in that decade.

It appears that the war has retarded population growth in 25 States and accelerated it in 23 States and in the District of Columbia. By the beginning of November 1943 California had aproximately 1.2 million more residents than she would have had if the average growth of the pre-war decade had been repeated. Michigan had an abnormal wartime accretion of 364,000, and Ohio, of 356,000. For 4 States (Maryland, New Jersey, Virginia, and Washington) the wartime excess ranged between 200,000 and 250,000. Abnormal wartime population gains of between 100,000 and 200,000 were also registered in Illinois (191,000), District of Columbia (164,000), Connecticut (145,000), Indiana (126,000), Oregon (123,000), Texas (138,000), Florida (112,000), and Massachusetts (108,000). Nine other States (Alabama, Arizona, Delaware, Kansas, Louisiana, Nevada, Pennsylvania, Rhode Island, and Utah) have had abnormal wartime gains of less than 100,000. On the other hand, the following States have many fewer persons than they might have had under peacetime conditions: New York (256,000), Kentucky (193,000), Minnesota and Oklahoma (162,000), North Carolina (155,000), Iowa (131,000), Arkansas (127,000), and Mississippi (113,000). In 17 other States, the population is smaller, by 100,000 or less, than it would have been if the pre-war change had been repeated.

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[4] Texas experienced a small net out-migration, along with a large absolute increase in population. This apparent disparity results from the large population base in conjunction with the high birth rate in the State. The excess of births over deaths in Texas was considerably higher than in any other State, even New York with over twice as large a population.

Table 2.—*Wartime and Pre-War Population Changes, by States*

State	Estimated total wartime population change, April 1940–November 1943 [1]	Average pre-war population change, 43 months of 1930–40 decade	Difference between wartime population change over average pre-war population change during 43 months
United States	+5, 566, 698	+3, 201, 921	+2, 364, 777
Alabama	+71, 232	+67, 217	+4, 015
Arizona	+108, 663	+22, 928	+85, 735
Arkansas	−92, 974	+34, 166	−127, 140
California	+1, 592, 957	+442, 849	+1, 150, 108
Colorado	+22, 082	+31, 502	−9, 420
Connecticut	+181, 610	+36, 842	+144, 768
Delaware	+27, 525	+10, 125	+17, 400
District of Columbia	+227, 262	+63, 440	+163, 822
Florida	+266, 700	+154, 513	+112, 187
Georgia	+65, 405	+77, 478	−12, 073
Idaho	−16, 957	+28, 743	−45, 700
Illinois	+287, 369	+95, 971	+191, 398
Indiana	+193, 762	+68, 145	+125, 617
Iowa	−106, 867	+24, 238	−131, 105
Kansas	+761	−28, 790	+29, 551
Kentucky	−109, 662	+83, 174	−192, 836
Louisiana	+126, 633	+94, 423	+32, 210
Maine	−4, 632	+17, 929	−22, 561
Maryland	+305, 877	+68, 298	+237, 579
Massachusetts	+131, 684	+24, 159	+107, 525
Michigan	+513, 237	+148, 961	+364, 276
Minnesota	−80, 226	+82, 205	−162, 431
Mississippi	−50, 457	+62, 631	−113, 088
Missouri	−4, 815	+55, 907	−60, 722
Montana	−46, 433	+7, 866	−54, 299
Nebraska	−55, 387	−22, 366	−33, 021
Nevada	+30, 996	+6, 908	+24, 088
New Hampshire	−639	+9, 443	−10, 082
New Jersey	+286, 219	+42, 779	+243, 440
New Mexico	−3, 536	+39, 060	−42, 596
New York	+65, 226	+320, 787	−255, 561
North Carolina	−10, 746	+144, 485	−155, 231
North Dakota	−68, 503	−14, 008	−54, 495
Ohio	+449, 823	+93, 929	+355, 894
Oklahoma	−183, 161	−21, 458	−161, 703
Oregon	+171, 635	+48, 923	+122, 712
Pennsylvania	+179, 679	+96, 779	+82, 900
Rhode Island	+47, 583	+9, 306	+38, 277
South Carolina	+12, 568	+57, 974	−45, 406
South Dakota	−62, 627	−17, 960	−44, 667
Tennessee	+102, 982	+107, 743	−4, 761
Texas	+350, 153	+212, 439	+137, 714
Utah	+71, 482	+15, 287	+56, 195
Vermont	−20, 955	−137	−20, 818
Virginia	+300, 233	+92, 132	+208, 101
Washington	+302, 667	+62, 206	+240, 461
West Virginia	−22, 849	+62, 197	−85, 046
Wisconsin	+9, 932	+71, 489	−61, 557
Wyoming	+4, 187	+9, 064	−4, 877

[1] Source: Bureau of the Census, Release P–44, No. 17.

Unless the States with abnormal wartime accretions can provide peacetime economic opportunities comparable in magnitude to those created by the war demand, they will find themselves after the war with a greatly overexpanded population. Although to some extent such States can count on a reversal of the wartime pattern of interstate migration, it would be dangerous to rely too strongly on such expectations. It should not be forgotten that while wartime migrations occurred in response to strong positive incentives, such as the definite assurance of jobs or higher wages, a reverse movement after the war might have to depend chiefly on the negative stimulus of unemployment. The history of "depressed areas" in many countries demonstrates that unemployment is often an insufficient spur to migration, unless coupled with fairly definite prospects of employment elsewhere. At best, such a reverse migration would be a painful process, and it would probably require either an increased measure of Federal intervention or a much higher degree of coordination between States in the formulation of mutually acceptable policies than has hitherto been achieved in times of peace. In particular, the coordination of employment information and of job placement would be essential, and a greater uniformity in standards of unemployment compensation, public relief, public health, and education would be most helpful.

Extent of Demobilization

An attempt was made to measure the effect on each State of a hypothetical volume of demobilization from the armed services and from munitions manufacturing. For purposes of the study "demobilized persons" were assumed to include (1) persons to be released from the armed services as a result of a reduction from the estimated peak strength of 11.3 million, and (2) persons to be released from war production as a result of a reduction in the combined total manufacturing employment of a selected group of munitions industries below the March 1944 level. Military demobilization as here defined will presumably not begin until the first part of the war is ended, but industrial demobilization has already begun, and may be far advanced before the end of the war on all fronts.

In table 3, the hypothetical number of servicemen to be demobilized was taken as 8.8 million, in order to allow for the retention of 2.5 million in the armed forces during the early post-war years.[5] The latter figure is based merely on a consensus of widely quoted opinions. The 8.8 million demobilized servicemen were distributed among the States in proportion to each State's contribution to the total number of inductions, as reflected by Selective Service local board inventories through March 1944.

It seems most likely that, as a rule, servicemen will be discharged in, or will at first return to, the States from which they were inducted,[6] and that the demobilized workers will constitute a problem in the first instance for the States in which they held wartime jobs, either by seeking new jobs, drawing unemployment compensation, requiring relocation assistance, or in other ways.

The estimated 5.4 million war workers to be demobilized is based on the hypothesis of a cutback, at least temporarily, to 1940 State employment levels in 12 "munitions industries" comprising all or part of 12 major manufacturing-industry groups,[7] that have been greatly

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[5] No allowance need be made for military casualties, since it is assumed that there will be 11.3 million effectives in the armed services at the time demobilization begins.

[6] This seems to be the most realistic, as well as the most convenient, hypothesis in the present state of our knowledge. Most servicemen tried to arrange their induction as near their family's place of residence as possible and will wish to rejoin their families first. Individual deviations from this pattern may to a considerable degree offset one another, e. g., persons inducted from Texas who return to other States may be offset by persons inducted from other States who return to Texas.

[7] Munitions industries include all, or almost all, of the following major industry groups: Ordnance and accessories; selected chemicals; rubber products; iron and steel (except tin cans and tinware); transportation equipment, except automobiles; nonferrous metals; electrical machinery; machinery, except electrical; and automobiles and automobile equipment. In the following major industry groups, only the specified component industries in parentheses are included in the munitions industry classification: Stone, clay and glass products (abrasives); products of petroleum and coal (coke and byproducts); and miscellaneous manufacturing (professional and scientific instruments, photographic apparatus, and optical goods).

TABLE 3.—*Hypothetical Military and Industrial Demobilization, in Relation to Pre-war Employment, by States*

State	Total employment, April 1940 (in thousands)[1]	Demobilized persons (in thousands)			Demobilized persons as percent of 1940 employment
		Armed forces	Manufacturing employees	Total	
United States	45,166.0	8,800.0	5,436.0	14,236.0	31.5
Alabama	893.8	193.6	83.0	276.6	30.9
Arizona	150.2	35.2	13.2	48.4	32.2
Arkansas	583.9	132.0	19.4	151.4	25.9
California	2,525.3	492.8	591.6	1,084.4	42.9
Colorado	349.7	70.4	22.8	93.2	26.7
Connecticut	680.5	123.2	187.8	311.0	45.7
Delaware	102.6	17.6	21.3	38.9	37.9
District of Columbia	308.9	61.6	16.4	78.0	25.3
Florida	683.3	132.0	58.0	190.0	27.8
Georgia	1,107.4	220.0	57.0	277.0	25.0
Idaho	158.6	35.2	.8	36.0	22.7
Illinois	2,874.4	519.2	339.2	858.4	29.9
Indiana	1,151.7	228.8	249.9	478.7	41.6
Iowa	862.8	149.6	36.7	186.3	21.6
Kansas	583.8	105.6	56.4	162.0	27.7
Kentucky	847.6	184.8	51.1	235.9	27.8
Louisiana	771.1	167.2	60.8	228.0	29.6
Maine	279.0	52.8	36.5	89.3	32.0
Maryland	690.9	132.0	91.1	223.1	32.3
Massachusetts	1,534.8	264.0	228.8	492.8	32.1
Michigan	1,825.0	369.6	430.4	800.0	43.8
Minnesota	931.5	176.0	52.9	228.9	24.6
Mississippi	727.5	140.8	15.7	156.5	21.5
Missouri	1,297.1	237.6	72.1	309.7	23.9
Montana	185.6	35.2	1.8	37.0	19.9
Nebraska	433.4	79.2	26.8	106.0	24.5
Nevada	41.5	8.8	8.2	17.0	41.0
New Hampshire	176.0	26.4	18.7	45.1	25.6
New Jersey	1,569.1	290.4	330.9	621.3	39.6
New Mexico	140.3	35.2	(2)	35.2	25.1
New York	4,974.5	880.0	533.0	1,413.0	28.4
North Carolina	1,208.7	255.2	23.5	278.7	23.1
North Dakota	200.4	44.0	(2)	44.0	22.0
Ohio	2,345.0	457.6	479.8	937.4	40.0
Oklahoma	658.7	140.8	43.8	184.6	28.0
Oregon	389.8	70.4	86.2	156.6	40.2
Pennsylvania	3,230.2	668.8	376.1	1,044.9	32.3
Rhode Island	264.7	44.0	52.5	96.5	36.5
South Carolina	661.1	140.8	20.7	161.5	24.4
South Dakota	204.5	35.2	(2)	35.2	17.2
Tennessee	941.7	202.4	56.6	259.0	27.5
Texas	2,138.4	440.0	172.2	612.2	28.6
Utah	148.9	35.2	3.0	38.2	25.7
Vermont	125.1	17.6	10.2	27.8	22.2
Virginia	933.1	193.6	70.3	263.9	28.3
Washington	607.7	114.4	171.2	285.6	47.0
West Virginia	519.1	132.0	23.9	155.9	30.0
Wisconsin	1,060.8	193.6	133.7	327.3	30.9
Wyoming	86.6	17.6	(2)	17.6	20.3

[1] From 1940 Census of Population.
[2] Less than 100 persons.

expanded during the war, and that are now dependent in very large part upon a war-induced demand.[8] A temporary cutback to 1940 levels or lower is bound to occur in these industries unless (a) war-induced orders are replaced by orders for civilian use automatically and instantaneously and in equivalent volume, and (b) work pro-

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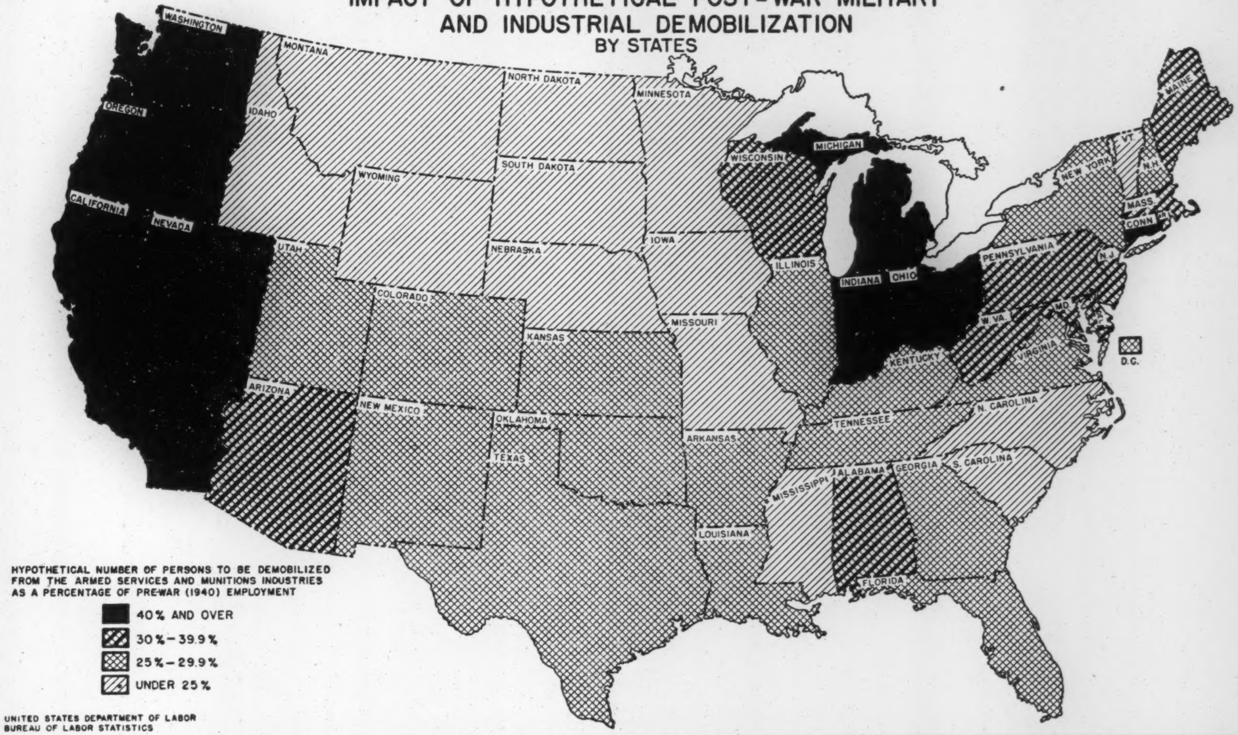
[8] In these industries it is not only the increase in employment since 1940 that is now dependent upon war orders, but a large part of the employment that was in 1940 producing goods for civilian markets as well.

CHART 2



IMPACT OF HYPOTHETICAL POST-WAR MILITARY AND INDUSTRIAL DEMOBILIZATION
BY STATES

HYPOTHETICAL NUMBER OF PERSONS TO BE DEMOBILIZED FROM THE ARMED SERVICES AND MUNITIONS INDUSTRIES AS A PERCENTAGE OF PRE-WAR (1940) EMPLOYMENT
■ 40% AND OVER
▨ 30%–39.9%
▦ 25%–29.9%
▧ UNDER 25%
WASHINGTON
OREGON
CALIFORNIA
NEVADA
IDAHO
MONTANA
WYOMING
UTAH
ARIZONA
COLORADO
NEW MEXICO
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
TEXAS
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN
ILLINOIS
MICHIGAN
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
S. CAROLINA
N. CAROLINA
VIRGINIA
W. VA.
MD.
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ceeds on these new orders without any interruptions caused by such factors as settlement of war contracts, clearance of war inventories and machines from plants, retooling and physical reconversion where necessary, financing, rebuilding of sales force, etc., not to speak of temporary lack of confidence in adequacy of the markets.[9]

The relative severity of the impact of demobilization cannot be measured by the absolute number of persons to be demobilized (table 3), since a large or populous State can probably absorb a larger number of demobilized persons with less strain than can a smaller, more thinly populated State. Chief consideration should therefore be given to the number of demobilized persons in relation to a State's pre-war capacity to provide employment, as shown in the last column of table 3 and in chart 2.

Along the West Coast and in Nevada, in Michigan, Indiana, and Ohio, and in Connecticut it is estimated that there will be 4 or more demobilized servicemen and war workers for every 10 persons employed in 1940, and very nearly that many in New Jersey and Delaware. There will be more than 3 demobilized persons to every 10 pre-war jobs in Maine, Massachusetts, Rhode Island, Pennsylvania, Maryland, Alabama, West Virginia, Wisconsin, and Arizona. Even in most of the North Central and Northwest States, and in some of the Southeastern States where the problem will be less severe, the demobilized persons will nevertheless total one-fifth to one-fourth of the pre-war number of jobs. Moreover, within these, as well as other States, particular communities will face readjustments of much greater severity than is indicated by the State average.

DEMOBILIZATION FROM GOVERNMENT-OWNED WAR PLANTS

One category of manufacturing employment that is of special interest, in estimating the volume of industrial demobilization, is employment in Government-owned war plants. Here, the likelihood of at least temporary discontinuance of employment at the end of the war is especially acute. Government investment in new war production facilities has usually been necessary in those cases where post-war profitability was doubtful, either because of the specialized nature of the equipment or because of uncertainty as to the peacetime demand for the product. To the extent that these doubts still exist, there will be hesitation in shifting into peacetime production. There will also be legal and financial problems involved in transferring these plants to private ownership. In many cases the present operators have options that may result in the interruption of production for a period of from 3 to 6 months while bargaining over the purchase of the plant.

Although data on the total employment in Government-owned war plants are not available, a recent study covers the distribution of approximately 2 million manufacturing employees in the new, large plants (each valued at half a million dollars or over) in which the Government has borne at least 95 percent of the cost, and which are privately operated. The data on manufacturing employment in

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[9] It is not implied that the cutbacks to a 1940 level of employment will necessarily occur in one single stage, or simultaneously in the different industries, or that the transition from war-induced orders to orders for civilian use will always involve a change in the type of work done

TABLE 4.—*Manufacturing Employment and Public Investment in Selected Government-Owned, Privately Operated War Plants, by States, September 1943*

State	Manufacturing employment		Public investment	
	Number	Percent of estimated total manufacturing employment, April 1940	Amount (in millions) [1]	Percent of total public investment in war industrial facilities [2]
United States	2,073,000	20.0	$7,988.6	54.6
Alabama	38,900	26.5	239.1	63.3
Arizona	6,900	84.1	55.2	56.7
Arkansas	13,100	25.5	161.3	71.8
California	298,700	74.0	427.1	50.3
Colorado	17,400	52.3	60.7	48.4
Connecticut	21,000	6.9	74.6	32.6
Delaware	10,900	34.9	14.8	69.8
Florida	50,200	70.9	42.8	71.9
Georgia	44,900	23.8	94.7	88.3
Illinois	102,300	12.3	820.4	72.6
Indiana	103,800	29.1	549.1	68.3
Iowa	21,600	23.2	92.7	60.2
Kansas	54,600	114.0	298.0	95.8
Kentucky	12,700	15.0	128.0	59.6
Louisiana	34,300	36.0	198.8	60.0
Maine	27,900	30.4	24.2	67.4
Maryland	65,300	35.5	59.0	29.3
Massachusetts	46,700	8.3	101.3	33.1
Michigan	100,400	14.1	413.0	38.8
Minnesota	23,900	22.4	94.4	37.9
Mississippi	11,800	20.4	29.6	64.6
Missouri	87,100	36.6	449.8	94.2
Nebraska	14,400	50.3	85.7	83.0
Nevada	5,700	475.0	132.9	93.3
New Jersey	44,300	7.3	66.8	13.9
New Mexico	400	9.1	2.6	63.4
New York	129,500	9.9	349.4	35.0
North Carolina	23,800	7.6	42.6	91.0
Ohio	155,100	19.8	739.4	64.7
Oklahoma	44,200	103.5	166.9	78.4
Oregon	72,600	93.7	63.9	75.2
Pennsylvania	81,000	7.6	365.9	31.6
Rhode Island	16,700	14.2	25.9	34.9
South Carolina	2,600	2.0	4.5	9.9
Tennessee	20,800	13.0	242.8	72.0
Texas	132,200	71.4	538.1	60.1
Utah	11,700	75.5	44.4	17.3
Virginia	9,900	6.1	102.3	49.1
Washington	72,600	61.3	177.0	62.1
West Virginia	7,700	8.3	197.2	77.2
Wisconsin	33,400	12.7	209.9	56.8
Wyoming	----------	----------	2.7	18.2

[1] Includes 14 nonmanufacturing plants not included in figures on manufacturing employment and accounting for 1 percent of total employment for the sample.

[2] Data on the State distribution of publicly-financed war industrial facilities cumulative through November 1943 from War Production Board, Summary of War Supply and Facility Contracts, February 5, 1944.

these plants are reproduced in the first column of table 4.[10] It will be noted that California has almost 300,000 persons employed in these plants, and Illinois, Indiana, Michigan, New York, Ohio, and Texas, over 100,000 each.

Comparison of these figures with total employment in manufacturing before the war, i. e., in April 1940, indicates that in Kansas and in

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[10] See Employment in Government-Owned, Privately Operated New War Plants (in Monthly Labor Review, July 1944, pp. 39-46), for a more detailed description of the sample, and additional data. Figures on employment in the present article exclude, while those on investment include, 14 nonmanufacturing plants covered in the article cited. Employment in these 14 plants constitutes about 1 percent of total employment in the sample.

Oklahoma, for example, the number of persons working in these large Government-owned war plants is larger than the total number of persons working in manufacturing before the war, and that in Nevada it is considerably more than four times as large. In nine other States it is at least half as large or more. Moreover, the plants covered in this sample account for only about half of the total Government investment in war facilities. In interpreting the value of the Government investment in these plants and the ratio of this investment to total value of publicly financed war industrial facilities in each State, shown in table 4, it should be remembered that the amount of employment per dollar of public investment is higher in some industries (e. g., airplane assembly) than in others (e. g., chemicals and metals), and that smaller plants, or plants financed to a less degree by the Government, may perhaps be more readily and more rapidly returned to peacetime production.

DEMOBILIZATION IN FIELDS OTHER THAN MANUFACTURING

The foregoing estimates include only persons to be demobilized from the munitions manufacturing industries, and from the armed services. They do not include workers in Government service, in trade, and in transportation and public utilities, whose jobs are directly or indirectly connected with the war. Many of these workers will also face a possible loss of employment as the war agencies are disbanded, the military camps and depots are shut down or put on a stand-by basis, and the war-boom communities lose at least a part of their wartime accretions in population.

Between April 1940 and March 1944 there occurred an estimated national increase of 200,000 workers in trade, 776,000 in transportation and public utilities, and 1,788,000 in Government service.[11] Employment gains in these specific components, by States, are unfortunately not obtainable, but State estimates of increases in total nonmanufacturing, nonagricultural employment are available. The designated increases are estimated at 240,000 in California, 192,000 in Texas, 133,000 in the District of Columbia, 127,000 in Illinois and in Oregon, 122,000 in Virginia, 121,000 in Nebraska, 118,000 in Minnesota, 117,000 in Pennsylvania, and 111,000 in Ohio, with smaller increases in most of the other States. Since national levels of employment in mining, construction, finance, services, and miscellaneous industries have declined, these figures understate, if anything, the gains in the remaining nonmanufacturing, nonagricultural components—trade, transportation and public utilities, and Government.

It is not yet possible, however, to estimate the volume of post-war demobilization to which these wartime increases in nonmanufacturing, nonagricultural employment will give rise. A reduction to 1940 levels of employment in these components, even temporarily, cannot be assumed except in a very few communities that are heavily dependent upon temporary military posts or upon entirely nonconvertible war industries. Such an estimate would, therefore, require a detailed inspection of the individual post-war employment prospects of all the chief communities in which significant wartime expansion has occurred.[12]

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[11] This, however, includes about 300,000 workers in Government arsenals, navy yards, etc., already covered in the estimate of the number of persons to be demobilized from manufacturing.

Demobilization and Unemployment

The foregoing demobilization estimate should not be taken as an estimate of unemployment, since the volume of demobilization is only one of the factors determining post-war unemployment in the demobilization period. The other chief factors are the volume of voluntary withdrawals from the labor market, the number of new jobs created, and the timing of demobilization, of withdrawals, and of the creation of new jobs. Some of these factors may be influenced by public policy.

The most important groups likely to withdraw from the labor market voluntarily are young persons of school or college age, older persons past the normal age of retirement, and some women workers who will not wish to continue working under peacetime conditions. The number of temporary withdrawals among younger persons will be influenced by public policy with regard to minimal educational requirements, by the quality and type of the instruction afforded—itself to some degree a reflection of the funds devoted to education—and by the financial assistance given to those capable of benefiting by further education but unable to afford it. Retirement of the overaged may be influenced to some extent by the liberality of the retirement and survivors' allowances provided by the social-security system. Voluntary retirement of women will be largely influenced by whether or not the Government takes vigorous action to maintain employment and to assure that sufficient employment will be available in the future. If widespread unemployment is anticipated, many of the women who plan ultimately to withdraw from the labor market will be likely to try to safeguard the family income by holding their jobs as long as possible. It should be noted that the timing of withdrawals of all types is of great strategic importance. If measures are to be taken that will facilitate and encourage temporary or permanent withdrawals from the labor market on a voluntary basis, it is highly desirable that they be taken soon enough to be effective at the time when the problem of transitional or "reconversion" unemployment will be most acute.

The rapidity with which the troops are returned from overseas and the speed with which the armament program is reduced will obviously be most important factors in determining the gravity of the unemployment problem. These factors, however, will depend chiefly on the military progress of the war. Delays in the repatriation of the armed forces or in the cancellation of war contracts, simply for the purpose of minimizing unemployment, are hardly to be expected, or desired.

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[12] Data for such an estimate are being assembled in a series of individual "area studies" on individual communities, being prepared in the Post-War Labor Problems Division of the Bureau of Labor Statistics. Reports have already been published on 28 areas: Pittsburgh, Pa., Labette County, Kans., 5 western Kentucky counties, Mayes County, Okla., Windsor County, Vt., Clark County, Nev., Gibson County, Tenn., Newport, R. I., Huntsville, Ala., Detroit, Mich., Louisville Ky., Sauk County, Wis., Muscle Shoals, Ala., Waco, Tex., Bath, Maine, Tulsa, Okla., Harford County, Md., Pascagoula, Miss., Kansas City, Mo.-Kans., Manitowoc, Wis., Des Moines, Iowa, Dallas-Fort Worth, Tex., Los Angeles, Calif., Talladega County, Ala., Birmingham, Ala., Wilmington, N. C., Providence, R. I., and 5 Virginia coal-mining counties. Reports on 33 other areas are being currently prepared.

The significance of the creation of new peacetime jobs in reducing the burden of transitional unemployment scarcely requires comment. Not only the number of jobs to be created, but their timing, will be of the utmost importance. The volume of unemployment created by a given volume of demobilization will depend to a large degree upon the decisions of public policy with regard to the following questions: (1) Will reconversion be allowed to get under way as soon as surplus materials and manpower are available, even if, by introducing new firms, or strengthening some firms as against others, this upsets prewar relationships within the industries affected? (2) Will prompt and energetic measures be taken for clearance of war inventories and machinery from war plants? (3) Will adequate funds be made available for reconversion, or expansion of peacetime production, for both small and large, new and old, businesses? (4) Will Government-owned war plants be rapidly returned to civilian production—if necessary, on a lease basis and, if necessary, before final arrangements for their ultimate disposition have been completed? (5) Will plans for the backlog of normal public works interrupted by the war be in a sufficient state of readiness, both from an engineering and from a legal and financial viewpoint, to exploit to the full the job-giving potentialities of the construction industry? (6) Will the Government provide such explicit assurances that high levels of employment and consumption will be maintained, as to produce a widespread confidence in the adequacy of the future demand for the goods and services that industry is able to produce?

In turn, the volume of unemployment allowed to develop during the demobilization period will have important effects on the level of employment readily attainable over a longer period. Serious transitional unemployment would encourage a policy of retrenchment and watchful waiting on the part of both consumers and investors, thereby greatly increasing the volume of economic activity that would have to be directly generated by Government if high levels of employment were to be regained.

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UNITED STATES DEPARTMENT OF LABOR
Frances Perkins, *Secretary*

BUREAU OF LABOR STATISTICS
Isador Lubin, *Commissioner* (on leave)
A. F. Hinrichs, *Acting Commissioner*

WARTIME WAGE MOVEMENTS AND URBAN WAGE-RATE CHANGES

From the MONTHLY LABOR REVIEW
of the Bureau of Labor Statistics
United States Department of Labor
OCTOBER 1944 *issue*

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[From the MONTHLY LABOR REVIEW (October 1944) of the Bureau of Labor Statistics, United States Department of Labor]

Wartime Wage Movements and Urban Wage-Rate Changes[1]

Summary

FIELD surveys of actual pay rolls by the Bureau of Labor Statistics show that wage stabilization has been increasingly effective during the war period. Since the Stabilization Act of October 1942, comparatively few "general" wage increases have been granted. Moreover, the trend of urban factory wage rates, including wage increases to individual workers, has leveled off in the most recent period. During the 21 months, January 1941 to October 1942, urban factory wage rates increased by 0.8 percent per month. During the following year the increase was 0.6 percent per month. During the 6 months, October 1943 to April 1944, the most recent period for which wage-rate information is available, the average increase dropped to 0.3 percent per month.

Although the gross weekly earnings of factory workers rose by 71 percent from January 1941 to April 1944 and their gross hourly earnings rose by 48 percent, urban factory wage rates rose by only 28 percent in this period and "general" increases in wage rates amounted to less than 16 percent.

The substantial increase in weekly earnings[2] is partly attributable to increased hours of work, amounting to an equivalent of nearly 1 additional day of work each week. Both weekly and hourly earnings, moreover, have been influenced by a variety of factors which have caused earnings to rise more rapidly than wage rates. The most important of these factors in recent years have been the growing prevalence of overtime work at premium rates and the growing importance of employment in the higher-wage war industries. Thus, the estimated averages of straight-time hourly earnings of factory workers, after eliminating the influence of the two factors just noted, show an increase of 33 percent from January 1941 to April 1944, in contrast to the increase of 48 percent in gross hourly earnings. Other factors which have tended to raise earnings more than wage rates include the growing importance of the higher-wage centers of employment, the growth of late-shift work at premium pay, the increased output of incentive workers, and extensions of the incentive method of pay. None of the increases in earnings arising from these factors is inconsistent with a stabilization of wage rates. Neither weekly nor hourly earnings provide an adequate measure of the effectiveness of the wage-stabilization program.

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[1] Prepared in the Bureau's Division of Wage Analysis by Robert J. Myers, Harry Ober, and Lily Mary David. The planning and analysis of the study was supervised by N. Arnold Tolles. Special assistance was provided by Toivo P. Kanninen, John F. Laciskey, and Margaret L. Hammond.

[2] The increase in net spendable earnings has been much less than the increase in gross weekly earnings. See Spendable Earnings of Factory Workers, 1941-43, by N. Arnold Tolles, in Monthly Labor Review, March 1944 (pp. 477-489) or Bulletin No. 769.

Analysis of the material available regarding the changes in urban wage rates of factory workers reveals a marked transition since the outbreak of the war in the method by which those changes have been accomplished. From January 1941 to October 1942, prior to the stabilization period, wage rates were typically raised by means of broad, general increases in time or incentive rates, many of which affected all workers in a given establishment. Out of the total increase in wage rates during this period, estimated at 17 percent, about 13 percent—or roughly three-fourths—was accounted for by general increases affecting 10 percent or more of the workers (or all workers in a key occupation) in a given establishment. During the following 18 months (October 1942 to April 1944) wage rates rose by approximately 9 percent, but less than one-third of this increase—a little more than 2 percentage points—was accounted for by general wage increases. The major part of the increase in wage rates during this period resulted from merit increases, in-grade promotions, and other wage adjustments affecting individual workers or small groups. In the most recent period for which information is available, October 1943 to April 1944, general wage increases accounted for only about one-fifth of the declining total of increases in wage rates.

Information regarding wage rates in nonmanufacturing is not available for the entire period since January 1941. From April 1943 to April 1944, however, wage rates in selected nonmanufacturing industries rose by 9.4 percent. The wages paid in nonmanufacturing are typically lower than those in manufacturing and, in general, the greatest increases in wage rates occurred in those segments of nonmanufacturing industry in which the lowest wage rates have prevailed.

Wage Rates and Earnings

Wage rates represent the pay for some specified unit of labor, such as an hour's work or the amount of work necessary to perform a given operation. Hourly earnings may be defined as a total amount of earnings divided by a total of hours actually worked.[3] While the term "wage rate" implies a particular occupation or type of work, the term "hourly earnings" may be applied appropriately to widely dissimilar groups of workers (e. g., an entire industry, all workers in a geographic area, an age group, etc.). Although wage rates, particularly for "white-collar" workers, are frequently quoted in terms of a day, a week, a month, or some other unit, all wage rates referred to in this article have been reduced to an hourly basis.

During periods of general economic stability it may be safely assumed that changes in average hourly earnings reflect changes in wage rates. Under rapidly changing conditions of employment, however, such as those of recent years, earnings and rates may move quite differently. Indeed, for short periods they may move in opposite directions. Simple averages of total pay roll divided by total hours of work can furnish only a rough approximation of changes in wage rates.

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[3] This is essentially the computation made by the Bureau of Labor Statistics in preparing its monthly figures on average hourly earnings, although certain additional steps are necessitated by the nature of the basic data.

The distinction between rates and earnings may be seen more clearly from a list of the chief factors that influence average earnings. Table 1, which presents such a list, indicates which of the major factors affect various measures of wage changes recently issued by the Bureau of Labor Statistics.

TABLE 1.—*Major Factors Influencing Specified Bureau of Labor Statistics Measures of Wage Changes*[1]

Item No.	Factor	Urban wage rates	Straight-time hourly earnings		Gross hourly earnings	Gross weekly earnings	Spendable weekly earnings
			Adjusted to eliminate interindustry employment changes	With industry weights as currently reported			
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	General changes in hourly rates	[2] X	X	X	X	X	X
2	Changes in liberality of basis for incentive pay	[2] X	X	X	X	X	X
3	Adjustments in the hourly rates of individual workers (or small groups) in recognition of merit, length of service, etc	X	X	X	X	X	X
4	Changes in the output of workers paid on an incentive basis	[3] X	X	X	X	X	X
5	Changes in the prevalence of incentive payment	[3] X	X	X	X	X	X
6	Changes in the relative importance of individual companies or establishments	[4] X	X	X	X	X	X
7	Changes in the composition of the labor force	([5])	X	X	X	X	X
8	Changes in the relative importance of individual regions or localities	-------	X	X	X	X	X
9	Changes in the provisions for premium pay for work on extra shifts	-------	X	X	X	X	X
10	Changes in the extent of extra-shift work at premium pay	-------	X	X	X	X	X
11	Changes in occupational structure	-------	X	X	X	X	X
12	Changes in the provisions for premium pay for overtime work	-------	X	X	X	X	X
13	Changes in the relative importance of individual industries	-------	-------	X	X	X	X
14	Changes in the prevalence of overtime work at premium pay	-------	-------	-------	X	X	X
15	Changes in the weekly hours of work	-------	-------	-------	-------	X	X
16	Changes in pay-roll deductions for taxes, bonds, etc	-------	-------	-------	-------	-------	X

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[1] The list of factors is not exhaustive, but is believed to include the most important factors influencing wage changes in a group of industries. (As applied to individual industries or establishments the list would require modification.) Nonincentive bonuses, vacations with pay, and similar factors have been excluded from the list because they are rarely reflected in measurements of wage changes. Changes resulting from revised definitions, such as the revision involved in the portal-to-portal decision in coal mining, have also been ignored for present purposes. The measures of wage changes referred to in this table have appeared in recent publications of the Bureau of Labor Statistics.

[2] Factors 1 and 2 constitute "general wage changes" and are referred to jointly by this term in a later section of this article. As a matter of research procedure, general wage changes are considered to include those wage changes that affect 10 percent or more of the workers (or all of the workers in any key occupation) in an establishment; changes that affect smaller groups are considered as individual adjustments (factor 3).

[3] These factors are permitted to influence the measurement of changes in urban wage rates only because they cannot readily be separated from item 2. In special tabulations, however, it is possible to eliminate the influence of all three factors (2, 4, and 5).

[4] The influence of this factor is allowed only in the interest of simplifying tabulating procedures and because it is believed to be unimportant; it can be excluded if desirable.

[5] The influence of this factor on the measure of urban wage rates has been largely eliminated by the assignment of separate, constant weights to men and women workers, and by the distinction between learners and experienced workers. Under certain circumstances, however, labor turnover among experienced workers of the same sex may affect somewhat the average wage rates of individual occupations.

DEVELOPMENT OF WAGE SERIES

The oldest comprehensive and continuous [4] measure of wage changes issued by the Bureau is in the form of gross average weekly earnings (column f of table 1). Continuous series of average weekly earnings in manufacturing have been published by the Bureau of Labor Statistics for each month since 1919, and various nonmanufacturing industries have been added in subsequent periods. Average weekly earnings, consisting of a simple division of the total pay roll by the number of workers employed, constitute the most readily available type of wage statistics. Because they are greatly influenced by part-time and overtime work, the changing composition of the labor force, and other factors, average weekly earnings constitute a better measure of income trends than of changes in rates of pay.

Even as a measure of the worker's income available for expenditure, average weekly earnings have become defective in recent years, owing to the increased importance of pay-roll deductions. The approximate amounts of these deductions have been estimated by the Bureau for certain specified groups of workers so that net spendable earnings (column g) may be computed from the published averages of gross weekly earnings.[5]

Gross average hourly earnings (column e) have been published by the Bureau each month since 1932 for all major manufacturing and for selected nonmanufacturing industries. At the outbreak of the war, these averages of gross hourly earnings constituted the only comprehensive indicator of wage-rate changes, even though at least 14 factors influenced the result. More refined estimates of wage-rate changes became necessary as both wages and employment conditions began to undergo rapid wartime changes.

The first step in refining the gross averages of hourly earnings was to eliminate the effect of changes in the extent of overtime work at premium pay (factor 14) and thus to estimate the trend of average earnings on a straight-time basis (column d).[6] To eliminate the effect of interindustry shifts of employment, the Bureau next developed a series of estimates of straight-time earnings for manufacturing in which the distribution of workers by industry was maintained on the same proportionate basis as in 1939 or in any other base period with which comparison was desirable (constant industry weights).[7] This method serves to eliminate the influence of factor 13 in table 1. These two adjustments (column c), elimination of overtime premiums and constant industry weighting, permit the Bureau to distinguish between the 48-percent rise in gross hourly earnings since January 1941, and the 33-percent rise in straight-time earnings which would have occurred if the various industries had continued to employ their original proportions of the labor force.

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[4] Limited information as to both rates and earnings has been assembled since the earliest times and this body of information has been gradually extended ever since the establishment of the U. S. Bureau of Labor in the 1880's. (See History of Wages in the United States, Bulletin No. 604.) At one time the Bureau issued a crude but useful index of wage rates. The Bureau has published union wage scales for a group of time-work trades each year since 1907. (See Monthly Labor Review, January 1944, p. 163; February 1944, pp. 382 and 389; March 1944, p. 601; and April 1944, p. 822.)

[5] See Spendable Earnings of Factory Workers, 1941–43, in Monthly Labor Review, March 1944 (pp. 477–489) or Bulletin No. 769.

[6] For the method of estimating straight-time earnings, see Elimination of Overtime Payments from Gross Hourly Earnings, in Monthly Labor Review, November 1942 (pp. 1053–1056).

[7] For example, straight-time hourly earnings for all manufacturing in April 1944 averaged $0.942 when the averages for the various individual industries were weighted by employment in those industries in that month. The corresponding average was $0.862 when the current industry averages were weighted by employment in January 1939. See Monthly Labor Review, July 1944, p. 147; also Trends in Factory Wages 1939–43, in Monthly Labor Review, November 1943.

While the two steps just described brought the Bureau's figures closer than before to a measure of wage-rate changes, several of the other factors accounting for the difference could not be isolated by any estimates derived from the Bureau's mailed questionnaires covering gross pay rolls and man-hours. A new method was required to determine the changes in actual wage rates by occupation. The basis for the new method had been provided by the numerous field investigations of wages, conducted by the Bureau ever since its establishment. These field investigations had provided experience in classifying workers by occupation and obtaining actual wage payments per hour by inspection of company pay rolls. Their defect, as a means of measuring wage-rate changes, consisted simply of the lack of a comprehensive coverage of industries during any given year.

The opportunity to measure changes in job rates themselves was provided by the results of the Bureau's recent work for the National War Labor Board. To provide a factual basis for the setting of local wage brackets, the Board required a vast enlargement of existing information as to actual rates of pay, by occupation, industry, and locality. Generalized averages of hourly earnings for all the workers in an industry could not be used. To meet the Board's needs the Bureau expanded its field investigations of occupational wage rates early in 1943 on a project financed in part by the Board.[8] The wage information collected in this way, supplemented somewhat to improve its representative character, permits wage-rate comparisons for three periods: April 1943, October 1943, and April 1944. Additional information, not previously available, throws light on the nature of wage changes between January 1941 and April 1943.[9] The material for the period before April 1943 is discussed in a later section of this article.

METHOD OF MEASURING WAGE-RATE CHANGES

The measure of wage-rate changes presented for the period, April 1943 to April 1944, possesses the following important features: (1) The measure is based on the observations of trained field representatives of the Bureau, who visited the cooperating establishments and transcribed wage rates directly from pay rolls and other basic records; (2) the wage data relate to specific occupations, defined in writing to assure uniformity, and with appropriate distinction between men and women workers, experienced workers and learners, etc.; (3) the rates obtained are defined uniformly and exclude all premium payments for overtime and for work on extra shifts; (4) all comparisons relate to wage rates in establishments that are virtually identical from period to period; and (5) the use of constant weights assures that each occupation, each industry, and each area (but not each establishment) will exert the same degree of influence in all periods.

Examination of these features of the new measure of wage-rate changes reveals that they eliminate the influence of most of the disturbing factors which affect even the best over-all estimates of straight-time earnings. The influence of changes in the provisions for overtime premium pay (factor 12—illustrated by the adoption of double time instead of time and one-half for the seventh consecutive day of work) has been eliminated by excluding all premium pay from the original data. This approach has also, of course, eliminated the influence of premium pay for work on extra shifts (factors 9 and 10). The effect of changes in the number of workers employed in the various occupations (factor 11) is separable only in statistics collected by occupation and on a comprehensive scale; in the measurement of urban wage-rate changes this factor has been eliminated by the assignment of constant occupational weights. The influence of shifts in the employment of workers among the various localities (factor 8) has been offset by the same method.

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[8] See Statistics for Wage Stabilization, in Journal of the American Statistical Association, December 1943.

[9] Although the wage comparisons developed herein can be continued in the future with comparative ease, it is doubtful whether they can be carried further back into the past. The occupations of individual workers are not customarily shown in company pay-roll records and must be discovered by special investigation, requiring the assistance of foremen and others who know the nature of each worker's job. After the lapse of a few months it thus becomes almost impossible to identify a worker's occupation.

Although the influence of changes in the relative importance of individual establishments (factor 6) could be similarly canceled, there is evidence that this factor has been of little importance during the war period and, up to the present time, its elimination has not appeared to justify the considerable amount of work involved.

Changes in the composition of the labor force (factor 7) are illustrated by the substitution of women for men, or of beginners for experienced workers, without any significant change in the nature or importance of the job. The influence of this factor on the measure of wage-rate changes has been largely, although not entirely, eliminated by the assignment of separate and constant weights to male and female workers and by the elimination of rates for learners from the observations.

The measure of urban wage rates is also influenced somewhat by changes in output due to the increasing effort or skill of workers paid on an incentive basis (factor 4) and by changes in the prevalence of incentive payment (factor 5). Since neither of these factors constitutes a change in wage rates, the removal of their influence would be desirable if the factors could be segregated. In many cases, however, it is impossible, without prolonged and intensive investigation, to ascertain to what extent a change in incentive pay reflects a change in the basis of payment (factor 2) and to what extent a change in the intensity or effectiveness of work (factor 4). Measurement of wage-rate changes for time workers alone serves to eliminate the influence of all three of these factors.

By means of these eliminations and special measurements, therefore, it is possible to determine with considerable accuracy the effect of factors 1, 2, and 3 of table 1, which are believed to constitute a reasonable measure of wage-rate changes. The first two of these factors, which constitute "general wage changes," may also be measured with some accuracy.[10]

NATURE OF BASIC DATA

The data used in the new measure of wage-rate changes were obtained almost exclusively from areas centering in a city of 25,000 population or more. The measure consequently applies only to urban areas. Wage-rate changes in 69 separate areas were analyzed but, since many areas include suburbs or neighboring cities in addition to the central city, the number of cities and towns covered was substantially greater. The 69 areas include about 40 percent of the population of the Nation as a whole and 70 percent of the urban population. They represent all of the 48 States and a great variety of urban industry. In the selection of areas, particular attention was paid to the desirability of representing industries important in each region; thus, Akron was included because of the rubber industry, Grand Rapids to represent the furniture industry, and Waterbury to represent the brass industry of the Connecticut Valley. Although proportionately few areas of less than 100,000 were covered, the weight of these was increased in order to represent other areas of comparable size.[11] The regional boundaries used in this analysis have economic rather than administrative significance. They are intended to group States in which urban wage levels are roughly similar and in which wage movements would be expected to show generally similar trends.

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[10] As has been pointed out, certain changes in the liberality of incentive pay may be hidden or confused with increases in worker productivity. Ordinarily, however, these constitute but a small part of the total of general wage changes.

The manufacturing industries for which data were available had been selected as characteristic of the areas represented. For the most part they were the larger industries and tended to dominate the wage structure of the respective communities. Each area was represented by several different industries—typically 10 to 15.

The nonmanufacturing industries selected for study, unlike the manufacturing industries, were the same for all areas. These consisted of about 10 industries representing five broad groups. Specifically, financial institutions were represented by banks and various types of savings and loan associations; retail trade by department, clothing, and grocery stores; wholesale trade by general-line wholesale grocery establishments; local public utilities by electric light and power companies; and the service trades by laundries, hotels, and auto-repair shops. Conspicuously absent are construction, communication, and transportation, and, of course, the rural industries of mining and lumbering. Obviously the representation of nonmanufacturing is less complete than could be desired. It is hoped that the coverage of such industries may be extended in connection with future measures of wage-rate changes.

Approximately 6,600 establishments [12] were covered in the 69 areas, or an average of about 100 per area. In some of the larger areas, however, more than 300 establishments were covered, while several small areas were represented by fewer than 30 plants. Establishments with fewer than 9 employees were rarely covered, but otherwise the establishments included were reasonably representative of the industries and areas selected, some over-representation of the largest establishments being corrected by weighting.

It was deemed unnecessary to study all of the occupations in the establishments covered. The wage-rate changes in each establishment, therefore, were measured in terms of changes in selected key jobs. These jobs—usually 10 to 12 in number—were uniform within a given industry and were selected to represent the various skill groups and wage levels characteristic of the industry. Office and clerical jobs are represented only in the occupations for nonmanufacturing industries.

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[11] The areas covered, identified by central city, were as follows: *New England*—Boston, Bridgeport, Claremont-Springfield, Lowell, Portland, Providence, Waterbury; *Middle Atlantic*—Binghamton, Buffalo, Harrisburg, Newark, New York, Philadelphia, Pittsburgh; *Border States*—Baltimore, Charleston, Louisville, Richmond, Wilmington; *Southeast*—Atlanta, Birmingham, Columbia, Greenville, Jackson, Knoxville, Memphis, Raleigh, Savannah, Tampa, Winston-Salem; *Great Lakes*—Akron, Chicago, Cleveland, Detroit, Grand Rapids, Green Bay, Indianapolis, Lima, Milwaukee, Minneapolis, South Bend, Springfield; *Southwest*—Dallas, Houston, Little Rock, Lubbock, New Orleans, Tulsa; *Middle West*—Cedar Rapids, Fargo, Kansas City, Omaha, Sioux Falls, St. Louis, Wichita; *Mountain*—Albuquerque, Boise, Cheyenne, Denver, Great Falls, Phoenix, Salt Lake City; *Pacific*—Fresno, Los Angeles, Portland, Reno, San Francisco, Seattle, Yakima.

[12] This figure applies to the period October 1943–April 1944. Data for about 4,400 identical establishments were available for the preceding 6-month period. A somewhat broader industrial coverage was also achieved in the second period and, in general, the findings for the second period are more reliable and permit more detailed analysis than those for the first.

A brief comment on weighting will be of interest to most readers. Each occupation (and each sex, in occupations commonly employing both men and women) is considered to represent a skill class or group of similar occupations and has been assigned an appropriate weight, depending upon the proportion of all employees in the industry typically found in the class or group represented. Since the same occupational weights have been used for all periods studied, the averages derived have not been affected by changes in occupational composition. Each covered industry and each major industry group within each area has also been assigned a constant weight [13] as has each region. In general, no changes in the relative importance of industries, individual areas, or regions have been permitted to influence the results of the study. The weights assigned represent the distribution of employees in the autumn of 1943.

Trend of Urban Wage Rates, April 1943–April 1944

The 12-month period from April 1943 to April 1944 was one of considerable significance in the history of American wages. Although the National War Labor Board had been given compulsory powers early in 1942 and in October of that year had been charged with inaugurating a general wage-stabilization program, it was not until the spring of 1943 that a full-scale organization was in operation to administer this program. Hence, the year, April 1943–April 1944, represents the first period of operation of a complete program of wage stabilization.

MANUFACTURING INDUSTRIES

The increase in urban wage rates in manufacturing industries during the period from April 1943 to April 1944 amounted to 5.8 percent. The rise during the second 6 months of the year (1.9 percent) was only half as great as that during the first 6 months (3.8 percent), reflecting the development of effective stabilizing procedures by the War Labor Board and, in small degree, the continuing exhaustion of increases permitted under the "Little Steel" formula. Gross average hourly earnings in manufacturing,[14] influenced by changes in overtime payments, occupational structure, etc., rose 7.2 percent, and adjusted average hourly earnings (corrected for premium overtime payments and for changes in the importance of individual industries) rose 6.7 percent during the same period.

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[13] The information used as a basis for the weighting of industries, areas, and regions was supplied by courtesy of the Bureau of Employment Security of the Federal Security Agency, and of the various State unemployment compensation commissions.

[14] All figures on average hourly earnings presented in this article have been supplied by the Bureau's Division of Employment Statistics. Since these figures relate to earnings in all parts of the United States and are not limited to urban areas, their comparison with the measure of urban wage-rate changes may be subject to question. The comparison is also affected somewhat by differences in the size of establishments covered and by certain other differences. About three-fifths of all manufacturing employees, however, are employed in cities of 25,000 or more, and the inclusion of suburbs of these cities would result in an even higher proportion. Most of the other differences affect even smaller proportions of the workers. In view of this fact, and in view of the general consistency of the measure of hourly earnings and that of wage rates, the comparison is believed to be justified.

General wage increases were not a major factor in the rise of wage rates. Increases affecting as many as 10 percent of the employees simultaneously were reported by only 411 of the 2,332 establishments studied during the first 6 months and by only 397 of the 3,612 establishments studied during the second 6 months. In the aggregate, these increases raised the over-all average by only about 1.1 percent during the year.

The extension of incentive payment and the increasing output of incentive workers also appear to have been minor factors. A special tabulation based exclusively on the wage rates of time workers indicates an increase of 5.3 percent during the year, or almost as much as the tabulation including incentive workers. The wage rates (i. e., straight-time average hourly earnings) of incentive workers rose somewhat more than those of time workers,[15] but incentive payment was not common enough to exercise great influence.

There is no evidence that changes in the importance of individual establishments significantly affected the level of average wage rates during this period. Information is at hand, however, which will permit measurement of the influence of this factor before the measure of wage-rate changes is extended to later periods.

These observations lead to the inference, which is supported by the reports of hundreds of employers, that merit increases, automatic seniority increases, and other types of individual adjustments were the dominant factor in the rise of wage rates during the year.

Regional Variations

Variations in wage-rate increases by region are of particular interest because of the lack of regional detail in most of the wage information previously available. The figures presented in table 2 reveal a substantial degree of uniformity in wage movement among the various regions. All nine regions showed an increase, but in six the average rate of increase differed from the national average by not more than 1 percentage point.

The smallest increase, 3.7 percent, occurred in the Border States, where lower-than-average increases were rather general among the industries studied. Wage rates increased most, 8.3 percent, in the Middle West, where particularly large gains were registered in the leather industries (14.2 percent) and in metalworking (10.0 percent). The Great Lakes region was also influenced considerably by the metalworking industries, which showed the largest increase (7.1 percent) of any of the industry groups in that region.

There is little evidence here of any consistent relationship between level of wages and extent of increase. Although both the Pacific and Great Lakes regions—the highest-wage regions—showed greater increases than the Nation as a whole, the extent of the difference was slight. The lowest-wage region, the Southeast, also showed a greater-than-average increase, while the increase for the Southwest was only slightly less than the National average. The greatest increase, as has been seen, occurred in the Middle West, where about average wage rates prevail.

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[15] It would be erroneous to attribute the relatively rapid rise of incentive wages entirely to increasing worker productivity. There is, in fact, little evidence of increasing productivity during this period. It is probable that liberalization of piece rates (or their equivalent), which are notably difficult to stabilize, was the major factor.

TABLE 2.—*Percent of Increase in Urban Wage Rates in Manufacturing, by Economic Region and Selected Area, April 1943–April 1944*

Economic region and urban area [1]	Number of establishments studied [2]	Percent of increase from—		
		April 1943 to October 1943	October 1943 to April 1944	April 1943 to April 1944
All regions	3,612	3.8	1.9	5.8
New England	490	3.2	1.3	4.5
Boston	199	----------	----------	6.9
Providence	66	----------	----------	3.3
Middle Atlantic	715	2.6	2.9	5.5
Buffalo	76	----------	----------	11.8
Newark	93	----------	----------	8.3
New York	267	----------	----------	5.5
Philadelphia	142	----------	----------	3.7
Pittsburgh	44	----------	----------	2.8
Border States	214	1.6	2.0	3.7
Baltimore	61	----------	----------	2.8
Louisville	63	----------	----------	5.4
Southeast	334	3.6	2.2	5.9
Atlanta	55	----------	----------	5.1
Birmingham	45	----------	----------	2.9
Memphis	30	----------	----------	6.4
Great Lakes	945	5.1	1.3	6.5
Chicago	261	----------	----------	4.9
Cleveland	171	----------	----------	6.5
Detroit	134	----------	----------	6.1
Indianapolis	44	----------	----------	4.6
Milwaukee	74	----------	----------	3.0
Minneapolis	73	----------	----------	3.7
Middle West	202	4.8	3.3	8.3
Kansas City	45	----------	----------	3.1
St. Louis	87	----------	----------	10.6
Southwest	184	4.2	1.2	5.5
Dallas	46	----------	----------	9.2
Houston	43	----------	----------	1.8
New Orleans	40	----------	----------	7.8
Mountain	120	3.0	2.3	5.4
Denver	42	----------	----------	7.5
Pacific	408	4.6	1.3	6.0
Los Angeles	159	----------	----------	8.4
Portland	55	----------	----------	.4
San Francisco	84	----------	----------	1.3
Seattle	61	----------	----------	3.3

[1] For the names of other areas included within the various regions, see footnote 11, p. 7.

[2] These figures are included only to indicate the number of establishments from which pay-roll data were obtained; they refer to the period from October 1943 to April 1944. Other information representing all manufacturing employees in the respective regions was used for weighting purposes.

Intercity Variations

Only in the largest of the individual city areas is the coverage sufficient to justify presentation of separate figures. Table 2 gives such information for 28 of the 69 areas.[16]

These figures, too, show some uniformity with respect to the trend of wage rates. Eleven of the areas had increases within 2 percentage points of the national average. Portland, Seattle, and San Francisco all showed small increases during the year; wage-rate increases in these cities were partly offset by a decline in the competence and experience of workers in specific jobs resulting from a high rate of labor

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[16] There appears to have been no marked difference in amount of wage increase by size of city. The following figures present weighted averages of the yearly increases of individual areas, classified by size of central city.

Size of central city:	*Number of areas*	*Average increase (percent)*
Under 100,000	28	5.9
100,000 and over	41	5.7

turnover.[17] The largest increases occurred in Buffalo (11.8 percent) and St. Louis (10.6 percent), reflecting primarily increases in wage rates in the metal trades and (in the case of St. Louis) leather products.

As would be expected, the uniformity of wage-rate changes was greater within individual regions than in the Nation as a whole. All but 6 of the 28 areas experienced greater wage increases in the first half-year than in the second.

Wage-Rate Changes by Industry Group

The greatest increase in wage rates during the year studied was in the leather industries, chief of which is the manufacture of leather boots and shoes (table 3). The 8.7-percent increase reported for this industry group in all areas combined was influenced considerably by an increase of 14.2 percent in the Middle West and one of 9.4-percent in New England. Wage rates in petroleum refining, on the other hand, showed virtually no change in four of the five regions in which this industry is of significance. The slight decline in average rates for all regions combined is believed to reflect the substitution of inexperienced for experienced workers as a result of labor turnover. As is pointed out below, several of the industry groups that showed little change in wage rates during this period had shown substantial increases prior to the wage-stabilization program.

TABLE 3.—*Percent of Increase in Urban Wage Rates in Manufacturing, by Industry Group, April 1943–April 1944*

Industry group	Number of establishments studied [1]	Percent of increase from—		
		April 1943 to October 1943	October 1943 to April 1944	April 1943 to April 1944
All industries	3,612	3.8	1.9	5.8
Food and kindred products	693	3.2	1.1	4.3
Tobacco manufactures	26	1.1	3.1	4.2
Textile-mill products	192	2.7	2.7	5.5
Apparel and allied products	368	[2] .2	5.0	4.8
Lumber and timber basic products	84	(3)	(3)	(3)
Furniture and finished lumber products	99	3.4	1.8	5.3
Paper and allied products	64	5.2	.2	5.4
Printing, publishing, and allied industries	295	3.1	1.6	4.7
Chemicals and allied products	157	2.4	1.3	3.7
Products of petroleum and coal	33	[2] .3	(4)	[2] .3
Rubber products	25	2.0	2.5	4.6
Leather and leather products	101	4.5	4.0	8.7
Stone, clay, and glass products	26	(3)	(3)	(3)
Basic iron and steel	27	(5)	.5	(5)
Shipbuilding	43	.4	.4	.8
Metalworking (except basic iron and steel and shipbuilding)	1,379	5.4	1.9	7.4

[1] These figures are included only to indicate the number of establishments from which pay-roll data were obtained and refer to the period from October 1943 to April 1944. Other information representing all employees in the respective industry groups was used for weighting purposes.

[2] Decrease.

[3] Representation inadequate to show percent of increase.

[4] Less than a tenth of 1 percent.

[5] Data not available for April 1943.

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[17] This appears to be an unusual case in which the measure of wage-rate changes is appreciably influenced by a change in the composition of the labor force. See footnote 5, table 1.

It is notable that the war and nonwar industry groups show no sharp and consistent differences with respect to increases in wage rates. On the whole, the industries engaged primarily in production for civilian use appear to have raised wages most during the year. It is probable that local manpower shortages, concentrations of substandard wage groups, and other local considerations have been more important in causing variations in the trend of wage rates than have the general characteristics of entire industry groups.

Special attention should be given to the changes in wage rates in metalworking, since this broad group is engaged largely in the manufacture of war products and because it employs over two-fifths of all urban factory workers. Wage rates in the metalworking industries rose 7.4 percent from April 1943 to April 1944, with most of the increase coming in the first 6 months. All regions reported wage increases in this industry group, the range being from 2.7 percent in the Border States to 10.2 percent in the Southwest. The food industries are also of considerable interest, not only because they constitute an important civilian industry group but because they are represented in practically all areas. The following figures indicate the percent of increase in wage rates in the metalworking and food industries, by region:

	Percent of increase in wage rates	
	Metalworking	*Food*
New England	5. 8	4. 9
Middle Atlantic	8. 1	3. 3
Border States	2. 7	7. 5
Southeast	5. 1	6. 5
Great Lakes	7. 1	4. 4
Middle West	10. 0	5. 7
Southwest	10. 2	7. 1
Mountain States	5. 6	4. 3
Pacific Coast	8. 8	2. 5

SELECTED NONMANUFACTURING INDUSTRIES

The nonmanufacturing industries represented in the Bureau's study of wage-rate changes cannot be considered to represent all nonmanufacturing, in view of the fact that important industries such as construction, communications and transportation, and mining have been excluded. Agriculture and domestic service are, of course, also omitted. The five industry groups represented, however, currently employ about 9,000,000 urban workers, of whom a significant proportion are white-collar workers. Most of the nonmanufacturing employees represented are paid by the week or month instead of by the hour, and their wage rates are lower, on the average, than the rates of factory workers. Both because of their numerical importance and because of their distinctive characteristics, therefore, the nonmanufacturing workers form a significant group.

Wage rates in the five nonmanufacturing industry groups combined rose 9.4 percent from April 1943 to April 1944 (table 4)—considerably more than wage rates in factories. This increase is not affected by changes in the hours of work, since all weekly and monthly rates were converted to an hourly basis before the changes were computed. Although three of the five industry groups individually showed greater increases than the average for all manufacturing, the greatest increase (12.4 percent) occurred in retail trade, which employs almost as many urban workers as the other four groups combined. The following percentages indicate that large increases in wage rates in retail stores were experienced in nearly all regions:

	Percent of increase		*Percent of increase*
New England	6. 7	Middle West	15. 5
Middle Atlantic	12. 0	Southwest	21. 3
Border States	14. 7	Mountain States	7. 4
Southeast	14. 9	Pacific Coast	4. 9
Great Lakes	14. 8		

TABLE 4.—*Percent of Increase in Urban Wage Rates in Selected Nonmanufacturing Industries, by Industry Group, April 1943–April 1944*

Industry group [1]	Number of establishments studied [2]	Percent of increase from—		
		April 1943 to October 1943	October 1943 to April 1944	April 1943 to April 1944
Total, selected industries	3, 019	6. 4	2. 7	9. 4
Wholesale trade	269	2. 5	2. 0	4. 5
Retail trade	1, 142	9. 2	3. 0	12. 4
Finance, insurance, and real estate	389	3. 9	3. 1	7. 2
Local utilities	87	1. 5	1. 1	2. 6
Service trades	1, 132	6. 4	2. 4	8. 9

[1] The specific industries selected to represent these groups in the measurement of wage-rate changes were as follows: *Wholesale trade*—general-line wholesale groceries; *retail trade*—department stores, clothing stores, and groceries; *finance, insurance, and real estate*—banks and savings and loan associations; *local utilities*—electric light and power or gas companies; *service trades*—hotels, power laundries, and auto-repair shops.

[2] These figures are included only to indicate the number of establishments from which pay-roll data were obtained; they refer to the period from October 1943 to April 1944. Other information representing all employees in the respective nonmanufacturing industry groups was used for weighting purposes.

There is reason to believe that the substantial wage increases granted by retail stores, the service trades, and certain other nonmanufacturing industries during this period represented a delayed reaction to the forces that had raised wages in manufacturing industry many months earlier. Many stores and offices that had not previously been affected by manpower shortages were required to raise wages in order to keep their workers or attract new ones during this period. The "substandard wage" policy of the National War Labor Board also facilitated the raising of rates in the low-wage retail stores and service trades. It is notable that the wage rates of local utilities, which increased least during the period studied, have long compared favorably with those in manufacturing industry, and rose substantially prior to the spring of 1943.

General wage increases affected a relatively small proportion of the nonmanufacturing establishments studied. Only 361 of the 2,098 establishments studied in the first 6 months and only 430 of the 3,019 studied in the second 6 months reported such increases. For the most part the raising of rates was accomplished by means of the merit increases and seniority promotions that are characteristic of these industries.

Among the industries covered, incentive pay is of greatest importance in retail trade, particularly in department and clothing stores. Many stores, in addition to raising hourly rates, liberalized salesmen's commissions; sales per salesman, moreover, were at a high level. These factors, however, were not primarily responsible for the wage-rate increases in retailing. The average increase of wage rates for time workers only was 10.0 percent, or more than that for any other industry.

Variations by Region and City

Interregional and intercity comparisons of wage-rate changes in nonmanufacturing are particularly significant because the same industries have been studied in all localities. Data for all regions and for 28 large cities are presented in table 5. These show considerably wider variation than do the comparisons for manufacturing industry.

TABLE 5.—*Percent of Increase in Urban Wage Rates in Selected Nonmanufacturing Industries, by Economic Region and Selected Area, April 1943–April 1944*

Economic region and urban area [1]	Number of establishments studied [2]	Percent of increase from—		
		April 1943 to October 1943	October 1943 to April 1944	April 1943 to April 1944
All regions	3,019	6.4	2.7	9.4
New England	501	3.3	2.3	5.7
Boston	144	----------	----------	5.8
Providence	76	----------	----------	2.4
Middle Atlantic	483	5.6	2.3	8.0
Buffalo	73	----------	----------	4.3
Newark	79	----------	----------	[3] 12.7
New York	159	----------	----------	[3] 7.4
Philadelphia	66	----------	----------	12.9
Pittsburgh	43	----------	----------	5.8
Border States	222	6.5	4.6	11.4
Baltimore	49	----------	----------	9.5
Louisville	55	----------	----------	15.8
Southeast	424	9.3	4.1	13.8
Atlanta	54	----------	----------	13.7
Birmingham	37	----------	----------	12.0
Memphis	45	----------	----------	13.3
Great Lakes	541	8.2	2.2	10.6
Chicago	101	----------	----------	11.8
Cleveland	65	----------	----------	11.2
Detroit	69	----------	----------	16.1
Indianapolis	42	----------	----------	8.8
Milwaukee	49	----------	----------	11.1
Minneapolis	49	----------	----------	7.5
Middle West	187	8.6	3.0	11.8
Kansas City	32	----------	----------	11.7
St. Louis	35	----------	----------	11.0
Southwest	215	11.4	5.6	17.6
Dallas	43	----------	----------	21.8
Houston	49	----------	----------	16.3
New Orleans	47	----------	----------	19.2
Mountain	180	4.0	2.7	6.9
Denver	49	----------	----------	5.1
Pacific	266	2.7	1.8	4.5
Los Angeles	69	----------	----------	6.4
Portland	33	----------	----------	4.3
San Francisco	46	----------	----------	3.4
Seattle	37	----------	----------	1.5

[1] For the names of other areas included within the various regions see footnote 11, p. 7.

[2] These figures are included only to indicate the number of establishments from which pay-roll data were obtained; they refer to the period from October 1943 to April 1944. Other information representing all employees in the selected nonmanufacturing industry groups in the respective regions was used for weighting purposes.

[3] Data for April 1943 to October 1943 based only on wholesale groceries and department and clothing stores.

All regions showed greater increases in wage rates in the combined nonmanufacturing industries than in manufacturing. Nonmanufacturing wage rates in all regions were raised more in the first half-year than in the second. The two lowest-wage regions, the Southeast and Southwest, showed the largest increases in nonmanufacturing wage rates (13.8 and 17.6 percent, respectively), and the Pacific Coast, where the Nation's highest wage rates prevail, showed the smallest increase (4.5 percent). In five of the nine regions the average increase exceeded 10 percent.

In general, the rank of the various regions with respect to the increase in urban wage rates in individual nonmanufacturing industries was about the same as for the five industry groups combined. Thus, the Southwest showed the largest increase in three of the five industry groups and the second largest in the remaining two. The Pacific Coast region showed relatively small increases in all of the four industry groups for which information was available for the full year. [18]

Among the larger individual urban areas the change in wage rates during the year ranged from an increase of only 1.5 percent in Seattle to one of 21.8 percent in Dallas.[19] Only Boston, Providence, Buffalo, Denver, Seattle, and Los Angeles showed smaller increases in nonmanufacturing wage rates than in manufacturing. There was a marked tendency for those cities with the lowest wage levels in nonmanufacturing industry to show the greatest increase in wage rates between April 1943 and April 1944.[20] Among the exceptions to this tendency was Detroit, which, in spite of its high rank with respect to nonmanufacturing wage rates, was fourth from the top in percent of increase.

General Wage Increases in Manufacturing, January 1941–April 1943

Information similar to that presented in the preceding section is not available for the period prior to April 1943. Hitherto unpublished material regarding general wage changes put into effect by several thousand urban manufacturers, however, throws new light on the nature and extent of wage movements between January 1941 and April 1943. During most of this period, general wage increases (i. e., increases affecting the hourly or piece rates of substantial groups of workers simultaneously) provided the customary means of raising factory wages [21] and undoubtedly accounted for the preponderant share of all wage-rate changes.

NATURE OF INFORMATION

The Bureau's information on general wage increases is limited primarily to increases simultaneously affecting 10 percent or more of the workers in a given factory. In rare cases increases affecting smaller groups are included; as, for example, a raise affecting all employees in a key occupation. Most such increases during the period described here were uniform for an entire occupation, division, or shop; for example, 5 percent or 5 or 10 cents per hour for all maintenance workers. Many of the increases affected the entire factory labor force. Office employees were not covered.

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[18] Data on the increase in Pacific Coast utility wage rates are not available for the period prior to October 1943.

[19] Wage rates in nonmanufacturing industries increased slightly more in larger than in smaller cities, although this relationship was not found in all regions. The average increase for the cities of 100,000 or more was 9.6 percent while that for smaller areas was 9.3 percent.

[20] See Intercity Variations in Wage Levels, in Monthly Labor Review, August 1944.

[21] In nonmanufacturing industries general wage increases appear to have been much less important as a means of raising wage rates, while merit increases and other types of individual adjustment were more common. Although there is convincing evidence of an appreciable increase in the wage rates of nonmanufacturing workers during this period, an analysis of reports on general wage increases in several thousand nonmanufacturing establishments reveals that this type of wage adjustment was of minor importance.

As compared with the wage-rate changes described in the preceding section, general wage changes are more limited, since they exclude merit increases and other types of wage adjustment affecting individuals or small groups.[22] In the early years of the war, to be sure, prior to the passage of the Stabilization Act in October 1942, individual wage adjustments were relatively unimportant in their influence on wage levels, particularly in the larger establishments. For all of the early war period, however, and particularly for the period from October 1942 to April 1943, general wage increases provide only a minimum measure of the rise of wage rates.

Information regarding general wage increases was obtained by the Bureau's field representatives in connection with their visits to manufacturing establishments in the spring and summer of 1943. The findings presented in this article summarize general wage increases reported for characteristic industries in 40 large urban areas. Usable data were obtained from more than 5,700 establishments employing approximately 1,750,000 workers. Establishments employing fewer than 9 workers were not visited.

In summarizing the information on general wage increases the amount of each hourly increase was first expressed as a percentage of the estimated straight-time hourly wage bill of all workers.[23] The percentages representing the various establishments, including those that had granted no general raises, were then combined into weighted averages representing industry-area units. These weighted averages were further consolidated to represent broad industry groups and broad regions.

The establishments for which general wage increases have been analyzed are only roughly representative of urban manufacturing. Although careful weighting has improved the usefulness of the material reported, it is recognized to be subject to an appreciable margin of error. The summaries presented below should, therefore, be regarded as approximations, suitable primarily as a basis for broad, general conclusions.

EXTENT OF GENERAL WAGE INCREASES

The findings appearing in table 6 indicate that general wage increases alone raised urban factory wage rates by approximately 14 percent from January 1941 to April 1943. A 13-percent increase was effected in the 21 months prior to the passage of the Stabilization Act, while the 6 months following the passage of that act witnessed an increase of only 1 percent. As has been indicated above, these figures may be considered to represent minimum measures of the change in wage rates.

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[22] In terms of the list of factors influencing hourly earnings, presented in table 1, general wage increases include factors 1 and 2, but exclude factors 3 and 6. Since, in summarizing the increases reported, constant weights were assigned to the areas, regions, and establishments concerned, the resulting measure is clearly free from influence by the other factors.

[23] Thus an across-the-board increase of 5 cents per hour in a factory paying wage rates averaging $1.00 per hour was expressed as a 5-percent increase; a 10-percent increase affecting only half of the workers was also expressed as a 5-percent increase.

TABLE 6.—*Percent of Increase in Urban Wage Rates in Manufacturing, Caused Exclusively by General Wage Increases, January 1941–April 1943* [1]

Region and industry group	Number of establishments studied [2]	Percent of increase from—		
		January 1941 to October 1942	October 1942 to April 1943	January 1941 to April 1943
All regions	5,726	12.6	1.1	13.8
Northeast and Middle Atlantic	2,028	13.3	1.2	14.7
Southeast, Southwest, and Border States	962	14.3	.8	15.2
Great Lakes and Middle West	2,154	11.7	.8	12.6
Mountain and Pacific	582	11.1	2.2	13.6
Food and kindred products	792	11.3	1.3	12.7
Tobacco manufactures	32	13.3	.8	14.2
Textile-mill products	362	19.4	.3	19.7
Apparel and allied products	611	11.6	2.3	14.1
Lumber and timber basic products	44	(3)	(3)	(3)
Furniture and finished lumber products	97	9.3	.5	9.9
Paper and allied products	90	7.7	2.2	10.0
Printing, publishing, and allied industries	468	4.7	1.0	5.8
Chemicals and allied products	177	9.8	1.4	11.4
Products of petroleum and coal	31	15.8	.0	15.8
Rubber products	25	12.3	.6	13.0
Leather and leather products	160	13.1	1.1	14.3
Stone, clay, and glass products	27	(3)	(3)	(3)
Metalworking [4]	2,810	13.3	.9	14.3

A comparison of these findings with available measures of average hourly earnings is of considerable interest. Gross average hourly earnings rose 38 percent from January 1941 to April 1943, or more than twice as much as the rise resulting from general wage increases. Much of the increase in earnings, however, reflected the relative growth of the high-wage war industries and an increase in premium payments for overtime work. If rough correction be made for these factors, the remaining "adjusted" increase in average hourly earnings is 25 percent. For reasons discussed below, this figure also appears to exaggerate somewhat the extent of changes in wage rates and may be considered a maximum measure.

Analysis by broad region indicates that general wage increases were common in all parts of the country during this period. The greatest increase of this type took place in the southern section of the country (Southeast, Southwest and Border States), followed by the Northeast, the Mountain and Pacific States, and the Great Lakes and Middle West. It must be remembered, however, that the picture presented here is incomplete, since it includes general wage increases only. It is probable that wage adjustments of this particular type are more characteristic of the large, organized factories of the Northeast than they are of the smaller southern factories, in which unionization is less common. Although the regional detail provided in table 6 is of value in demonstrating the wide extent of general wage increases, it would be unwise to regard the differences shown as reliable measures of regional variations in the wartime trend of wage rates.

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[1] Data cover only urban areas of 100,000 or more.

[2] These figures are included only to indicate the number of establishments from which pay-roll data were obtained. Other information representing all manufacturing employees in the respective regions and industry groups was used for weighting purposes.

[3] Representation inadequate to show percent of increase.

[4] Including shipbuilding and basic iron and steel.

The data for separate industry groups may also be somewhat misleading and must be interpreted with caution. It is indicated, however, that general wage increases in the textile-manufacturing industries were sufficient to raise wage rates by almost 20 percent, while those in printing and publishing raised wage rates by less than 6 percent. Most of the industry groups, however, showed about the same average increase as all manufacturing combined. Several groups that showed little or no increase in wage rates in the year following April 1943 are seen to have granted substantial increases during the preceding 27 months; the petroleum and chemical-products industries are outstanding examples.

ESTIMATED CHANGE IN WAGE RATES

It has been pointed out above that the increase resulting from general wage changes between January 1941 and April 1943 constitutes a minimum measure of the increase in wage rates during this period, while the rise of adjusted average hourly earnings constitutes a maximum measure. The observation regarding adjusted hourly earnings, however, justifies further discussion and qualification.

January 1941 to October 1942.—Correction of hourly earnings for changes in the relative importance of the war industries and premium overtime pay undoubtedly removes the two factors that were primarily responsible for the divergent trends of wage rates and hourly earnings during the early years of the war. It should not be assumed without question, therefore, that the increase in adjusted hourly earnings exceeded that of wage rates; it will be seen, in fact, that during a later period (April 1943 to October 1943) wage rates actually rose more than adjusted hourly earnings.

There is reason to believe, however, that prior to the passage of the Stabilization Act adjusted hourly earnings increased appreciably faster than wage rates. The increase in shift differentials alone raised hourly earnings by almost 2 percent over the January 1941 base.[24] Another important factor was the relative increase of employment in the higher-wage regions and cities.[25] Incentive earnings undoubtedly rose appreciably during this early period, as a result of increased productivity. On the other hand, there was no significant increase in the proportion of women in manufacturing industry during this period and the increasing proportion of unskilled and semiskilled workers could not have been sufficient to offset the important forces tending to raise hourly earnings.

These observations are of help in arriving at a rough estimate of the probable increase in wage rates from January 1941 to October 1942. This estimate may confidently be placed between the limits of 13 percent (the amount of general wage increases in urban industry) and 21 percent (the increase in adjusted average hourly earnings). The upper limit, however, may be reduced by approximately 2 percentage points to eliminate the influence of increased premium payments for work on extra shifts. It appears reasonable to assume that the effect of the increase in the proportion of unskilled and semiskilled workers is approximately offset by the influence of the relative increase in the proportion of workers in high-wage regions and cities. The increase in hourly earnings due to increased productivity of incentive workers is estimated at 2 to 3 percentage points, which seems conservative. This, however, leaves only 3 to 4 percentage points to represent merit increases and other individual wage adjustments, plus any underreporting of general wage increases. It is doubtful whether the influence of these factors could have been less than this. Seventeen percent is estimated as the most probable increase, although the actual amount may have been 1 or 2 percentage points above or below this figure.

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[24] See Trends in Factory Wages, 1939–43, in Monthly Labor Review, November 1943 (p. 882).

[25] Some, but not all, of the effect of interregional and intercity shifts has been eliminated by correction for shifts among industries.

October 1942 to April 1943.—The increase in adjusted hourly earnings from October 1942 to April 1943 amounted to 3.3 percent and reflected a substantially lower monthly rate of increase than occurred in the preceding period. In view of the changes in the organization of industry that had already been accomplished, and in view of the substantial increase that occurred in the proportion of women workers,[26] it is doubtful whether adjusted hourly earnings rose appreciably more than wage rates during this 6-month period.

The estimate of wage-rate changes, however, may, in this case, be built up from the minimum of 1 percent representing general wage increases. Taking this approach, it remains only to add the estimated influence of merit increases and other individual wage adjustments. These accounted for an increase of about 3 percentage points in the following 6-month period, after relaxation of the restrictions on individual adjustments. During the period from October 1942 to April 1943 the extent of such adjustments was undoubtedly somewhat less, and is here estimated at a rounded 2 percent.

Comparative Trends in Earnings and Wage Rates, January 1941–April 1944

On the basis of the data presented in the earlier sections of this report it is now possible to estimate the increase in wage rates in manufacturing industry during the entire period from January 1941 to April 1944, and to compare this estimate with various measures of increases in earnings. Such comparison is afforded by table 7, which gives separate detail for the pre-stabilization period and for three 6-month periods since the beginning of wage stabilization.

The increase in urban wage rates during the entire period since January 1941 is estimated at about 28 percent. Rising wage rates thus accounted for about two-fifths of the increase in average weekly earnings (71 percent) and for less than three-fifths the increase in average hourly earnings (48 percent). "Adjusted" hourly earnings, corrected roughly for increases in premium overtime pay and for changes in the relative importance of the various industries, rose 33 percent during the period, or only about one-fifth more than urban wage rates.

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[26] Both the number and the proportion of women workers increased more in this period than in any other 6-month period since the outbreak of the war.

TABLE 7.—*Comparative Summary of Changes in Earnings and Wage Rates in Manufacturing, January 1941–April 1944*

Period	Number of months	Percent of increase				Percent of increase per month[1]			
		Gross weekly earnings	Gross hourly earnings	"Adjusted" hourly earnings[2]	Urban wage rates	Gross weekly earnings	Gross hourly earnings	"Adjusted" hourly earnings[2]	Urban wage rates
Total period (January 1941–April 1944)	39	71.0	48.2	33.0	[3] 27.5	1.3	1.0	0.7	[3] 0.6
Pre-stabilization period (January 1941–October 1942)	21	46.0	30.7	20.7	[3] 17.0	1.8	1.3	.9	[3] .8
Stabilization period (October 1942–April 1944)	18	17.2	13.3	10.2	[3] 9.0	.9	.7	.5	[3] .5
October 1942–April 1943	6	9.2	5.7	3.3	[3] 3.0	1.5	.9	.5	[3] .5
April 1943–October 1943	6	5.6	4.7	3.5	3.8	.9	.8	.6	.6
October 1943–April 1944	6	1.6	2.4	3.1	1.9	.3	.4	.5	.3

[1] In obtaining these monthly averages it has been assumed that the increase for each month is computed as a percentage of the rate at the beginning of that month. In most cases, therefore, the monthly figures are slightly lower than those computed by dividing the percentage for an entire period by the number of months in the period.

[2] Hourly earnings, excluding premium payments for overtime, and with industries weighted according to 1939 employment. This corresponds with column c of table 1.

[3] Partly estimated.

WAGE CHANGES BEFORE AND AFTER STABILIZATION

What the trend of wages would have been in the absence of wage stabilization will never be known, but table 7 shows clearly that the rise has been less steep since the beginning of the stabilization program than it was in the early years of the war. From January 1941 to October 1942, a 21-month period, wage rates rose 17 percent, while increases during the following 18 months totaled only 9 percent. The monthly rate of increase dropped from about 0.8 percent before stabilization to 0.5 percent in the stabilization period.[27]

The decline in the rate of increase has not proceeded without interruption, however. Despite the intensification of the stabilization program in the spring of 1943, wage rates rose slightly more in the next 6 months than they had risen in the preceding half-year period. The greatest degree of stabilization was achieved from October 1943 to April 1944, when the increase in urban wage rates averaged only 0.3 percent per month.

In conclusion, it is of interest to note that the factors chiefly responsible for wage movements have shown marked changes during the period covered by this study. In the early years of the war, changes in wage rates in manufacturing industry resulted primarily from general wage increases. Premium payments for overtime work and the growing importance of the high-wage war industries were the chief additional factors tending to raise average hourly earnings, although other factors exercised some influence. Weekly earnings were increased substantially by lengthening hours of work. Under wage stabilization, however, merit increases and other individual wage adjustments replaced general wage increases as the chief influence on such rates. The change in the relative importance of the war industries has been of decreasing importance. Weekly hours of work and premium payments for overtime have leveled off. As a result of these developments the differences in the trends of wage rates and hourly or weekly earnings have, for the time being, almost disappeared. In the half-year prior to April 1944 the increase of gross hourly earnings only slightly exceeded, and that of weekly earnings failed to attain, the rise of wage rates.

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[27] This drop appears to have been closely related to the inauguration of wage stabilization. A study of quarterly changes in adjusted hourly earnings indicates that the increase of 3.0 percent from July to October 1942 was the greatest increase for any quarter in the war period. From October 1942 to January 1943, however, the increase amounted to only 1.5 percent, which is about the average for subsequent 3-month periods.

This experience has deep significance for the future. As a result of reduction of hours of work and the growth of civilian industry, the trends of wage rates and of hourly and weekly earnings will inevitably again diverge. If wage rates are held at a constant level, earnings must necessarily fall. It is possible that even a modest increase of rates would be accompanied by a decline in earnings. In view of the large proportion of the national income that consists of wage payments, the level of wage rates will be a factor of enormous importance in the post-war development of the Nation.

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Serial No. R. 1682

[From the Monthly Labor Review (August 1944) of the Bureau of Labor Statistics, United States Department of Labor]

British Government's Employment Policy

THE Government of Great Britain has accepted the maintenance of a high and stable level of post-war employment as one of its primary aims, and has issued a White Paper[10] outlining the official policy proposed to reach this goal. Responsibility for leadership in the future employment program has thus been assumed by the Government. It is stated in the report that fulfillment of the objectives sought depends upon (1) the Government's success in creating conditions favorable to maintenance of a high level of employment and (2) the understanding and support of the whole community—employers and workers particularly—in raising industrial efficiency. Increased productivity is required to insure high employment combined with a rising standard of living. Although the proposals deal with internal policy, the report recognizes that the level of employment and the standard of living in Great Britain depend upon international conditions, as imports and exports are basic to the country's economy. In this connection the Government has already given proof of its intentions by signing the Atlantic Charter and by other measures, but here again the responsibility is placed on industry to make the most of opportunities to recover the export markets and to find new outlets or British-made products.

Transition to Peace

Plans for the transition from war to peace must be flexible. Conditions will be unsettled during the period between the end of hostilities with Germany and with Japan and for some time afterwards. It is estimated that 23 million men and women are either in the armed forces or in gainful employment—an increase of 4.5 million over 1939. About 80 percent of the employment in manufacturing industries is on Government work. In the transition, the trend will be toward private employment, and some 7 million workers are likely to change over. Many of these will not actually change their employment, as they will remain with the same firm. Others will have to change both their occupations and their place of employment. At the same time, production will shift from war weapons to civilian goods. If the change in demand were matched with supply, unemployment could be avoided immediately after the war. Time is required to gear for peace, however, just as it is needed to prepare for war. In this situation, the White Paper states, there is a threefold danger—

> (*a*) That patches of unemployment may develop where the industrial system fails to adapt itself quickly enough to peacetime production.
> (*b*) That demand may outrun supply and create an inflationary rise in prices.
> (*c*) That civilian production, when it is resumed, may concentrate on the wrong things from the point of view of national needs.

Government action is promised to forestall these dangers but "it would be vain to imagine that patches of unemployment can be eliminated altogether in the transition period." The shift from war to peace is not expected to be as abrupt as it was after 1918, but the Government is preparing to keep unemployment at a minimum, by—

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[10] Great Britain. [Ministry of Reconstruction.] Employment Policy. London, 1944. (Cmd. 6527.)

(*a*) Assisting firms to prepare to switch over their capacity to peacetime production as quickly as possible;

(*b*) Finding out in advance where the skilled labor which will gradually become available for civilian work will be most urgently required;

(*c*) Arranging, so far as war conditions permit, that labor and raw materials will be forthcoming for urgent civilian work and insuring that the machinery of allocation devised in wartime will be adaptable to the special conditions likely to obtain after the end of the war in Europe;

(*d*) Arranging, so far as possible, that curtailments of munitions production shall take place in areas where the capacity and labor can be used for civilian products of high priority;

(*e*) Arranging that the disposal of surplus Government stocks shall not prejudice the reestablishment and development of the normal trade channels for producing and distributing similar goods; and

(*f*) Regulating the disposal of Government factories in such a way as to help towards the early restoration of employment.

Using the methods cited, plans are being worked out to promote the orderly expansion of peacetime industries. The guiding principle will be to insure that labor and capacity no longer needed for munitions shall be used for civilian goods of high priority. At the same time that industry is to be aided in producing for peace, measures are to be taken to prevent an inflationary boom from occurring while goods are still in short supply. This will necessitate retention of rationing and price control for some time, price subsidies (if the Government is supported by the cooperation of all sections of the public), continued saving, and controlled use of capital. After years of wartime restrictions these proposals are not expected to be altogether palatable to the public. However, the Government has given assurance that no control will be maintained longer than needed, and that there is no intention to permit nonessentials to be produced at the expense of essentials.

The length of the transition period cannot be estimated. War in the East may still continue while Britain is attempting to restore its export trade. Recuperative powers of modern productive technique are strong, however, and it may not be long before production becomes sufficient for all demands. When that occurs, the maintenance of an adequate level of expenditures on goods and services will no longer be realized automatically, and then a deliberate policy must be directed toward insuring the required volume of expenditures.

Prevention of Local Unemployment

Specific proposals are made to check the development of localized unemployment in particular industries and areas during the transition period and for many years afterward. Reference is made to temporary unemployment caused by seasonal and other factors, as well as to longer-term unemployment that develops in particular industries and areas (known as distressed areas), owing to a temporary or permanent decline caused by technical change, the trend of fashion, or the growth of foreign competition. The problem of local unemployment, it is thought, can be attacked in three ways:

(*a*) By so influencing the location of new enterprises as to diversify the industrial composition of areas which are particularly vulnerable to unemployment.

(*b*) By removing obstacles to the transfer of workers from one area to another, and from one occupation to another.

(*c*) By providing training facilities to fit workers from declining industries for jobs in expanding industries.

Government policy is to be directed toward securing a balanced industrial development in areas that have been unduly dependent on industries specially vulnerable to unemployment. In influencing the introduction of diversified industries in these areas, strategic as well as industrial and social conditions will be considered. Necessary action will be taken to secure full development of basic services on which industry depends, and research will be undertaken to discover the most suitable types of industry. Need for legislation to deal with special (depressed) areas will disappear. These areas have not been depressed during wartime, and wartime experience has shown that production there can be efficient, but in special cases some of the workers may have to be established elsewhere. No single department of Government could conveniently undertake to formulate and administer the policy for the distribution of industry. It is a problem for the whole Government, but the report under review advocates a single channel through which public policy on the distribution of industry can be expressed.

In an expanding economy, workers must be ready and able to move freely between occupations. Immediately following the close of the war, problems of labor mobility will center mainly in the resettlement of members of the armed forces and of war workers. Plans for training have already been formulated and made public; they will continue in effect as long as needed. Where only brief training periods are required, employers should provide instruction on the job. A fundamental principle to be followed will be to furnish training as soon as the need is clear. The person will not be expected to wait until he has been unemployed for a long time before becoming eligible for retraining. Allowances to trainees are to be separated completely from unemployment benefits. The allowances are to be fixed at a scale above that for unemployment but not to yield a higher income than the wages the trainee is likely to receive in his first job following the course. Reliance is not to be placed primarily on large-scale labor transfers for a solution of unemployment problems in particular areas, but where transfer appears to be the suitable solution, efforts will be made to overcome some of the obstacles. Of these obstacles the lack of available housing for rent and the costs incident to settling down in a new environment are the most serious.

Conditions of High and Stable Employment

Regardless of the smoothness and speed of the transition, long-term problems connected with maintaining an adequate and steady volume of employment will remain. If they are to be solved—

(1) Total expenditures on goods and services must be prevented from falling to a level where general unemployment appears.

(2) The level of prices and wages must be kept reasonably stable.

(3) There must be a sufficient mobility of workers between occupations and localities.

The Government is prepared to accept responsibility for taking action at the earliest possible stage to arrest a threatened slump. In maintaining total expenditures and thus avoiding an unfavorable foreign-trade balance, exports must be higher than before the war, everything must be done to limit dangerous swings in private investment, public investment must be planned carefully in timing and volume to offset unavoidable fluctuations in private investment, and the Government must be ready to check and reverse the decline in expenditure on consumer goods which normally follows as a secondary reaction to a reduction in private investment.

Any public action to maintain expenditures will be useless unless wages and prices are kept reasonably stable. This is vital to any employment policy and, as such, must be clearly understood by all sections of the public. Employers and workers must be moderate in wage matters, so that increased expenditure at the onset of a depression may go to increase employment. Not every wage rate must remain fixed, but the principle of stability requires that a rise in the general level of wage rates shall be related to increased productivity. An undue advance in prices caused by factors other than wages would also adversely affect Government efforts to maintain employment. Stability of prices and wages being inextricably connected and vital to the success of an employment policy, the Government, employers, and labor must cooperate to insure their stability. In the White Paper, the Government accepts its responsibility and calls on workers and employers to examine their practices with a view to taking similar responsibility.

An adequate total demand for labor—maintained by a total expenditure sufficient to provide every worker with a job—would not result in the total disappearance of unemployment. Changes would always occur, and therefore on any given day numbers of persons would be registered as unemployed with employment exchanges. Such unemployment could be kept at a minimum if every individual exercised the fullest initiative. The Government pledges itself to assist in bringing men and work together and to prevent interference with labor mobility under plans whereby part-time work is supplemented by unemployment benefit. The report under review points out that it would be disastrous if the Government's efforts to maintain total expenditure were interpreted as an exoneration of citizens from the duty of fending for themselves.

Methods of Maintaining Expenditures

It will be necessary to maintain a policy of cheap money for some time after the war, and the possibility of influencing capital expenditures by varying interest rates will be kept in view thereafter. Monetary policy alone, however, will not counteract the inherent instability of capital expenditure. Therefore, the Government will encourage privately owned enterprises to plan their own expenditures in conformity with a general stabilization policy. Public investment can be used more directly as an instrument of employment policy. Insofar as possible, public capital expenditures (which are made by local authorities and public-utility bodies chiefly) will be expanded during slump periods to offset the drop in private expenditures, and will be curtailed when private expenditures rise. On the basis of annual reports from local authorities, covering proposed capital expenditures for the ensuing 5 years, the Government will be able to set a target each year for the volume of public works during the next year. Efforts will be made also to reduce the time lag between the decision to undertake a public capital expenditure and the date of starting work. The opinion is expressed in the White Paper that "in the past the power of public expenditure, skillfully applied, to check the onset of a depression, has been underestimated."

If capital expenditures do not keep the level of business activity at a sufficiently high level, the Government assumes responsibility for influencing the community's expenditure on consumption by varying the weekly contributions of employers and employed under the new system of social insurance. The standard rate of contribution would be assessed on the basis of forecast unemployment, in order to keep the fund in balance over a number of years. Actually, the rate of contribution would exceed the standard rate when unemployment fell below the estimated average level, and would be less than that standard in times of heavier unemployment. Other devices were examined for influencing the volume of consumption—such as variation of tax rates, the incorporation of some system of deferred credits as a permanent feature of national taxation, and Government purchase of certain consumer goods—but no specific proposals were made.

None of the main proposals involves deliberate planning for a deficit in the national budget in years of subnormal trade activity. The policy of steadily decreasing the dead-weight debt, when other forms of indebtedness are increasing, does not in the opinion of the Minister of Reconstruction mean a rigid policy of balancing the budget each year. Undue growth in the national debt would be reflected quickly in loss of confidence, but it would be no less serious to have a budgetary deficit arising from a fall in revenue caused by depressed industrial and commercial conditions. To control the situation the Government must take into account the need for maintaining national income and budgetary equilibrium, thereby insuring the confidence in the future that is necessary to a healthy and enterprising industry.

The Policy in Practice

Public control such as is outlined in the White Paper can be extended only as experience accumulates. It is intended to establish a permanent staff to measure and analyze economic trends and to "submit appreciations of them to the Ministers concerned," to guide them in taking the right action at the right time. The chief classes of statistics (in addition to those available before the war) which are to be assembled for the efficient operation of an employment policy are as follows:

(*a*) Statistics of employment and unemployment, including quarterly or monthly statements of present and prospective employment in the main industries and areas in the country, based on returns from employers.

(*b*) Regular information relating to savings, projected capital expenditure by public authorities, and, as far as possible, by private industry.

(*c*) An annual census of production showing the structure of the main groups of industries in the preceding year, including, inter alia, details of the quantity and value of output, stocks, and work in progress.

(*d*) Monthly figures of production, consumption and stocks, and, if possible, figures of orders on hand, based on sample returns obtained periodically throughout the year from large firms, trade associations, and public institutions.

(*e*) Annual and quarterly estimates of foreign capital movements and balance of foreign payments.

It is also proposed to make a more complete annual analysis of the constituents of the national income. Analysis of the financial position will be the basis for determining what measures are required to maintain employment and to secure a rising standard of living. At every stage, parallel studies should be made of the manpower situation by the Ministry of Labor and National Service. Correlation of the complementary budgets for total expenditure and for manpower will play a vital part in the formulation of Government policy for the maintenance of employment. The Government expresses the opinion in the White Paper that the chances of maintaining a high and stable employment will be better than ever before when the war is won, and that this can be accomplished without sacrificing the essential liberties of a free society.

Parliamentary Debate on the White Paper

When the White Paper was debated in the House of Commons on June 21–23, inclusive, it was well received. At the close of the debate a motion was unanimously adopted, stating that the House welcomed "the declaration of His Majesty's Government accepting as one of their primary aims and responsibilities the maintenance of a high and stable level of employment after the war." Although a small group regarded the motion "as being question-begging almost to the point of fraudulence," the members of the group did not vote against it, having made their objections a matter of record in the course of the debate. An amendment to the motion, to the effect that full and stable employment cannot be achieved while the major resources are privately owned, was rejected on the ground that it would have limited the debate. Regardless of political party, many members of the House of Commons expressed satisfaction that the Government had outlined a policy upon a subject on which it had not taken a stand previously. For example, one member stated that he welcomed the attempt to deal with the employment problem more than the actual terms.

Reference was made to avoidance of the use of the term "full" employment in the White Paper. Doubt was expressed that unemployment could be done away with under a system of free enterprise. One member held that the problem was practically insoluble and that only totalitarian governments can deal with unemployment; he asked which was of greater long-run importance, freedom of individual choice or unemployment. Another member said that the British disliked government control but could not afford to leave the system free and therefore had the choice between two evils. The Chancellor of the Exchequer stated that it was intended to reduce unemployment to a minimum and that the Government could not say more.

Depending upon their individual philosophy, members argued for a greater or lesser degree of public ownership as opposed to private enterprise. On this problem the White Paper takes no sides and spokesmen for the Government maintained that the problem was outside the scope of the report. A labor member criticized a policy allowing private enterprise a large degree of play in reorganizing employment policy.

Discussion dealt with the possible reduction in social-insurance contributions in slack times. Members in some cases tended to minimize the effectiveness of such a step as a means of preventing a downswing. Attention was also directed at the more important countermeasure, namely to increase public works when private business is shrinking. On this subject a member stated that it would require a great deal of convincing to show that a public-works plan can have quick results and can be stopped promptly when the need for it no longer exists. Another pointed out that the Government cannot expect to deal with fluctuations unless it deliberately, and not by accident, unbalances the budget on occasions. Still another speaker stated that modern economic thought demands that the budget shall be unbalanced to influence employment materially and added that the Government should state its position clearly.

Regarding the place of exports, all shades of opinion were expressed. Certain members with business connections were not hopeful that the target of a 50-percent increase could be reached. One speaker expressed concern that preparations were not being made for resumption of trade, while another deplored that the export drive was being placed before civilian necessaries, and that both were placed before the production of capital goods to restart industry.

Throughout the discussion members tended to expect concrete plans from the Government. Therefore, on the last day of the debate, the Minister of Production made a statement on the Government's position, to the effect that the White Paper dealt with unemployment but not its cure. By intention, no legislative or administrative details were included. He agreed with the Chancellor of the Exchequer's approach in saying that "the White Paper was designed to cure the problem under a system which permitted both public ownership and private enterprise." If members of Parliament agree that this is correct and the policy outlined in the White Paper commends itself to Parliament, the Government will take necessary measures to carry it out.

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[From the MONTHLY LABOR REVIEW (August 1944) of the Bureau of Labor Statistics, United States Department of Labor]

Sources of Wartime Labor Supply in the United States

Summary

SINCE the beginning of the National Defense Program in mid-1940, the number of persons employed in civilian jobs or in the armed forces has increased by more than 16 million. About 7 million of the wartime gain in civilian employment and military strength was accomplished through the employment of persons who were unemployed in 1940 and the remaining 9 million was made possible by increases in the size of the total labor force. On the basis of pre-war trends the labor force would have been expected to increase by only about 2½ million between 1940 and 1944. The gain of 6½ million above this expected or "normal" increase represents persons who, in ordinary times, would be students, housewives, retired workers, or others not working or seeking work in paid employment.

Youths of school and college age have been the largest single source of additional wartime labor supply, accounting for more than 3 million or approximately half of the extra workers in the labor force. Although many of these are working only part time while continuing to attend school, civilian attendance at schools and colleges is about 2,000,000 below the level expected on the basis of pre-war trends, and there is a serious educational deficit among persons now in their teens and early twenties.

A second major pool of wartime labor has been supplied by women over the age of 35 who have increased their labor-market participation by about 1½ million in excess of peacetime expectations. The extra workers in this group were recruited mainly from among married women who have no children or whose children are past the age where they require full-time care on the part of the mother. The number of workers among women between the ages of 20 and 35, on the other hand, has exceeded peacetime expectations by a relatively small margin. Not only has recruitment of young women been limited by their responsibility for the care of young children, but also many young women have dropped out of the labor market as the result of the dependency features of Selective Service regulations and wartime increases in marriage and birth rates. If it were not for an abnormally high proportion of workers among young women whose husbands are in the armed forces, the number of women between 20 and 35 in the wartime labor force would probably be somewhat below the level expected on the basis of pre-war trends.

Adult men have contributed approximately 1½ million extra workers to the wartime labor supply and these are about equally divided between men from the "fringes" of the labor market and men who, in normal times, would be retired. Those from the "fringes" of the market are men who ordinarily seek work only occasionally or intermittently and men of doubtful employability who had given up the search for a job after failing to measure up to the relatively rigid requirements of the pre-war labor market. The older men in the wartime labor market also include a considerable number who have continued working beyond the age when they ordinarily would have

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[1] Prepared in the Bureau's Occupational Outlook Division by Leonard Eskin.

retired. Although pre-war trends toward earlier retirement would normally have led to a decline in the rate of labor-market participation among older men between 1940 and 1944, there was actually a considerable increase during this period.

Trends in the Labor Force Since 1940

In the spring of 1940, just prior to the beginning of the National Defense Program, there were close to 54 million persons in the American labor force, including 45½ million employed in civilian jobs, ½ million in the armed forces, and almost 8 million unemployed.[2] Outside the labor force, there were in the noninstitutional population 14 years of age and over approximately 46½ million persons (9½ million men and 37 million women), including 30 million homemakers, 9½ million students, 5 million persons unable to work, and 2 million in other nonworking categories. The changes in the labor force from the predefense period to the current period of full-scale war activity may be summarized conveniently by analysis of the four 12-month intervals beginning with April 1940 when the Decennial Census was taken [3] and the current Monthly Report on the Labor Force was initiated.[4]

APRIL 1940–APRIL 1941

The first period, from April 1940 to April 1941, was marked by the beginning and initial expansion of the National Defense Program and the passage of the Selective Service Act. Aggregate civilian employment and military strength rose by 2¾ million (table 1) as unemployment was reduced by 2 million and the labor force increased by three-fourths of a million. Although this increase in the size of the total labor force was approximately in line with normal expectations, there were significant deviations from the "normal" trend among both men and women (chart 1).

The number of men in the labor force increased by almost a million or about 600,000 in excess of normal expectations. Most of the abnormal increase occurred among young men under 25, indicating a tendency to leave school earlier as jobs became more plentiful. In addition, the gain of a million in the net strength of the armed forces during this period no doubt involved the recruitment of some young men who, otherwise, would have remained in school.

Among women there was actually a decline of 200,000 in labor-force participation between April 1940 and April 1941, whereas an increase of more than 300,000 would have been expected normally. A major reason for the withdrawal of women from the labor market during this period was the rise in marriage and birth rates accompanying improved economic conditions. In addition, gains in family income probably accounted for some withdrawals from the labor market among women who had sought or obtained jobs in order to increase the family income during the depression.

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[2] Unemployment in April 1940 was estimated at 7.8 million persons of whom approximately 2.9 million were on public emergency work (WPA, etc.) and 4.9 million were seeking work.

[3] The labor-force data in the Decennial Census actually referred to the last week in March 1940. Subsequent to that date, however, the Census Bureau's Monthly Report on the Labor Force referred to the week containing the 8th of each month rather than to the last week in the month. For purposes of comparability, therefore, the analysis will be based on the figures for April of 1940 and April of each subsequent year.

[4] The Monthly Report on the Labor Force, which is taken on a sample basis each month, was initiated by the Work Projects Administration and taken over in 1942 by the Bureau of the Census. Recent revisions in both the Decennial Census data and the Monthly Report data have made the two comparable as far as possible. (See Census Bureau releases P-44, No. 6, and MRLF No. 22.)

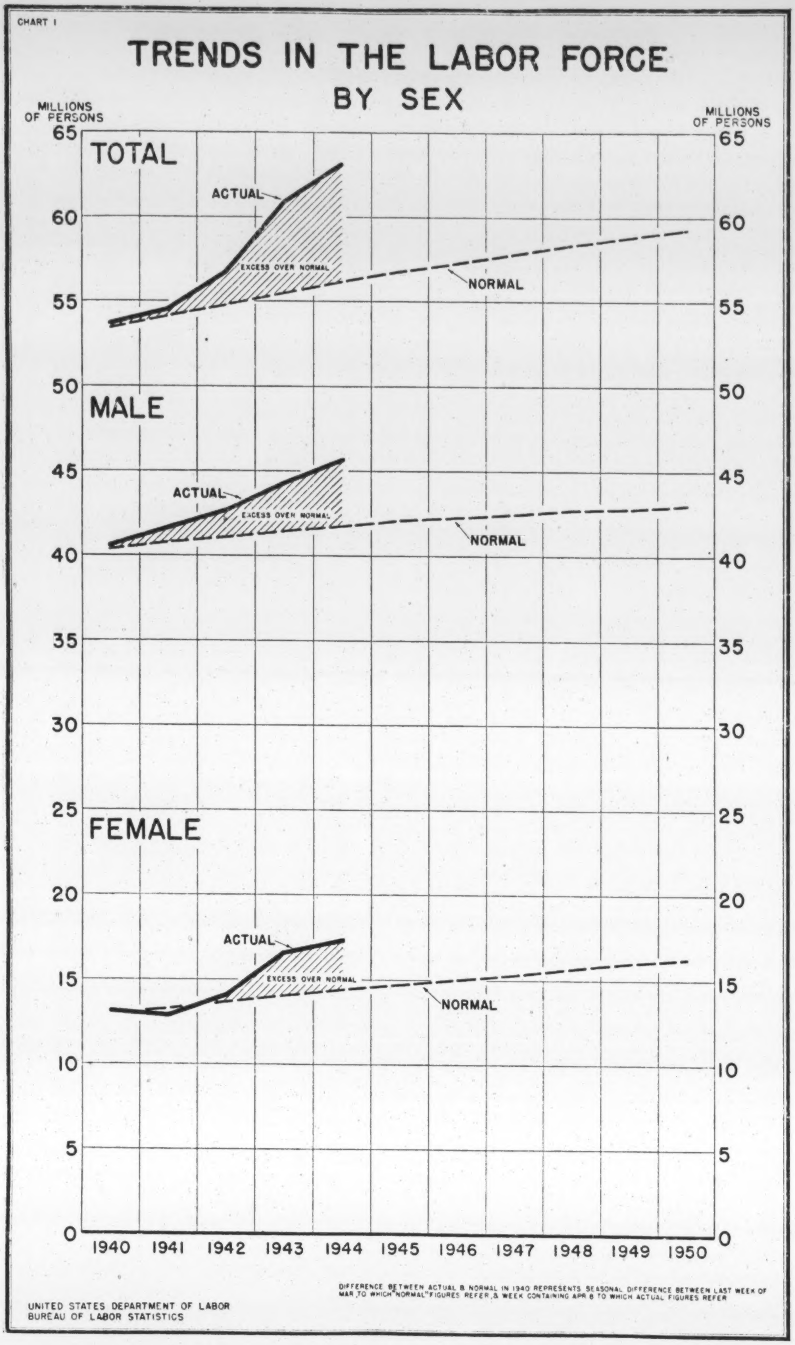

CHART 1

TRENDS IN THE LABOR FORCE BY SEX

DIFFERENCE BETWEEN ACTUAL & NORMAL IN 1940 REPRESENTS SEASONAL DIFFERENCE BETWEEN LAST WEEK OF MAR, TO WHICH "NORMAL" FIGURES REFER, & WEEK CONTAINING APR 8 TO WHICH ACTUAL FIGURES REFER

UNITED STATES DEPARTMENT OF LABOR
BUREAU OF LABOR STATISTICS

Another factor contributing to the decline in the female labor force during the first year of the Defense Program was the introduction and passage of the Selective Service Act. The extent to which the act directly caused women to leave their jobs in order to be considered dependent on their husbands is, of course, a matter of conjecture. Insofar as the act operated to increase marriage and birth rates, however, it no doubt exerted an indirect influence in causing some women to leave the labor force. There is a striking relationship between the timing of the introduction and passage of the Selective Service Act and the timing of movements in marriage and birth rates. Marriages (seasonally adjusted annual rate) rose from 9.6 per 1,000 of population in May 1940 to 14.1 in June when the Selective Service bill was introduced in Congress. The rate dropped to 12.0 in July, but surged to a peak of 14.7 in September when the measure became law. Birth rates followed the same pattern, with a lag of 10 months, the peaks coming in April and July of 1941.[5]

TABLE 1.—*Sources of Increase in Civilian Employment and Armed Forces, April 1940–April 1944* [1]

Period and sex	Increase in civilian employment and armed forces (in thousands)			Sources of increase (in thousands)	
	Total	Civilian employment	Armed forces	Decrease in unemployment	Increase in the labor force
Total, 4-year period	16,170	[2] 5,580	10,590	7,030	[2] 9,140
April 1940–April 1941	2,750	1,770	980	1,990	760
April 1941–April 1942	5,390	3,830	1,560	3,070	2,320
April 1942–April 1943	5,910	480	5,430	1,790	4,120
April 1943–April 1944	2,120	[2] −500	2,620	180	[2] 1,940
Males, 4-year period	10,390	[2] −10	10,400	5,530	[2] 4,860
April 1940–April 1941	2,650	1,670	980	1,660	990
April 1941–April 1942	3,450	1,900	1,550	2,420	1,030
April 1942–April 1943	3,000	−2,350	5,350	1,370	1,630
April 1943–April 1944	1,290	[2] −1,230	2,520	80	[2] 1,210
Females, 4-year period	5,780	5,590	190	1,500	4,280
April 1940–April 1941	100	100	----------	330	−230
April 1941–April 1942	1,940	1,930	10	650	1,290
April 1942–April 1943	2,910	2,830	80	420	2,490
April 1943–April 1944	830	730	100	100	730

[1] Sources: (1) Civilian employment—Bureau of the Census, Monthly Report on the Labor Force; (2) Armed forces—Bureau of Labor Statistics and War Manpower Commission.

[2] Net change computed on the basis of April 1944 totals adjusted to exclude an estimated 200,000 persons on temporary jobs who were included in the Census enumeration for April 1944 because the Census week coincided with Easter week. Adjustments were made on the basis of interpolations between March and May and experience in previous years.

APRIL 1941–APRIL 1942

The period from April 1941 to April 1942 saw the rapid expansion of the National Defense Program and the transition to an actual war program after the Japanese attack on Pearl Harbor in December 1941. A sharp employment increase in defense and war activities—munitions manufacturing, transportation, the Federal Government—was accompanied by gains in the consumer goods and service industries, in which employment was stimulated to record peaks by the rising volume of consumer purchasing power. Total civilian employment rose by almost 4 million—the largest 12-month increase ever recorded in the United States—and at the same time some 1½ million men were added to the armed forces. Reductions in unemployment accounted for 3.1 million of the total gain of 5.4 million in civilian employment and military strength, while increases in the labor force contributed 2.3 million.

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[5] American Journal of Sociology, November 1942: The Impact of the War on Population and Vital Phenomena, by Philip M. Hauser. Marriage rates quoted are based on 16 States for which monthly data are available.

During 1941 the female labor force recouped the losses sustained in 1940 and the male labor force continued to increase at a rate somewhat in excess of "normal." At the time of the attack on Pearl Harbor the number of women in the labor force was approximately in line with normal expectations and the number of men was about a million over "normal." By April 1942 the female labor force exceeded the normal level by almost half a million and the number of extra workers in the male labor force had grown to 1½ million.

Among the women there were approximately 700,000 extra workers, divided equally between girls under 20 years of age and women over 35. This was partially offset, however, by a deficit in the 20–34 group which was still 200,000 below "normal," as a result of the withdrawals during 1940 and a continued upward movement in marriage and birth rates.

Approximately 600,000 of the 1.5 million extra males in the April 1942 labor force were under 20 years of age, 200,000 were between 20 and 25, and the remaining 700,000 were spread fairly evenly throughout the age range over 25.

APRIL 1942—APRIL 1943

The mobilization of manpower for the war effort proceeded at top speed during the interval from April 1942 to April 1943 and a large part of the total mobilization to date was concentrated within that period. Approximately 5½ million persons were added to the armed forces alone. Although the net increase in total civilian employment was only half a million, there was an extensive "reshuffling" of workers within the civilian economy. The munitions industries and Government war agencies experienced their most rapid expansion during this period—an expansion which was supplied largely through shifting of workers from employment in other fields, particularly construction, agriculture, trade, and service.

The unemployed had supplied 5 million of the 8 million increase in aggregate civilian employment and military strength during the 2 years ending April 1942. Thereafter, new recruits to the labor force became the main source of labor supply, accounting for more than 4 million out of the 6 million increase that occurred between April 1942 and April 1943. The remainder of the gain in civilian employment and military strength was supplied through a reduction of 1.8 million in unemployment, which fell to a near-minimum level of less than 1 million persons and most of these were in the process of changing jobs.

Even more unusual than the unprecedented mobilization of 5½ million men for the armed forces during the interval between April 1942 and April 1943 was the addition of 2½ million women to the labor force. The magnitude of an increase of this size in the course of a single year can perhaps be better understood when it is considered that it is approximately equal to the gain in the female labor force during the entire decade from 1930 to 1940.

The greatest contribution to the record-breaking increase in the female labor force was made by women over the age of 35. Labor-force participation in this group increased by 1.3 million, or about 1.1 million in excess of normal expectations. Teen-age girls accounted for more than half of the remaining gain in excess of "normal," but there was also a substantial increase in the 20–34 age group which rose to a level above "normal" for the first time since 1940. Altogether, the increase in female workers during this period exceeded normal expectations by about 2.1 million, bringing the total number of extra women workers in the labor market to 2.6 million in April 1943.

The male labor force also experienced its greatest gains during this period. An increase of 1.6 million—about 1.2 million over "normal"—brought the total number of extra male workers to 2.7 million. Three-fourths of the abnormal increment took place in the youngest and oldest age groups, the number of teen-age boys in the labor market increasing by 500,000 in excess of normal expectations and the number of men over 55 by 400,000.

APRIL 1943–APRIL 1944

By the autumn of 1943 the broad objectives for mobilization of manpower in civilian industries had virtually been attained. After reaching a peak in November, munitions employment started on the downgrade and, by April 1944, was slightly under the April 1943 level. This decline was made possible not only by decreases in requirements for certain munitions items, but also by increases in efficiency and labor utilization resulting from greater experience with production methods and labor-market controls. Total production of munitions was maintained at approximately peak levels even after employment turned downward.

As total manpower objectives were approached, the principal problem shifted from one of general nation-wide mobilization to one of meeting labor shortages in local centers of war production and in certain industries where wages or working conditions are unfavorable or where able-bodied men are required. Up to the end of 1942 the number of men in civilian jobs had been maintained well above the 1940 level, for the number of unemployed men and new male workers taking jobs had been more than enough to offset withdrawals to the armed forces. With the reserves of unemployed men just about depleted, however, the needs of the military ate into the ranks of male civilian workers throughout 1943 and the first part of 1944. In April 1944 the number of men in civilian jobs was approximately the same as in April 1940. Thus, the net increase of 5½ million in civilian employment since 1940 had been accounted for entirely by women. In addition, some 200,000 women had been added to the armed forces (table 1).

The only substantial demands for additional manpower between April 1943 and April 1944 came from the armed forces which expanded by 2.6 million. This expansion was made possible by an increase of 1.9 million in the labor force and decreases of 500,000 in civilian employment and 200,000 in unemployment. The major part of the gain in the labor force took place among men, who increased by 1.2 million or about 900,000 above normal expectations. Men under 45 years of age accounted for all of the abnormal increase, 600,000 of the gain being concentrated among boys under 20, particularly the 18- and 19-year-olds who had become liable for military service at the end of 1942. Teen-age boys entered the armed forces in large numbers between April 1943 and April 1944 as limitations were placed on draft deferments, first for nonfathers under the age of 26 and later for all persons under the age of 22. High-school enrollment of boys aged 18 and over which had declined by less than 50,000 between the school years of 1939–40 and 1942–43 dropped by 200,000 between 1942–43 and 1943–44.[6] Similarly, the number of civilian men enrolled in college declined by only 140,000 between the autumns of 1939 and 1942, and then fell by more than 400,000 in the following year.[7]

The increase in the female labor force between April 1943 and April 1944 exceeded normal expectations by 400,000 and virtually all of this abnormal gain was accounted for by women between 20 and 25 years of age. This reflected the drafting of married men on a large scale as the pool of physically fit men without dependents and with no occupational deferments was exhausted. By April 1944 there were about 3 million women in the United States with husbands absent in the armed forces.[8] Many young married women who would normally have quit work or remained outside the labor force found it necessary to continue working or to take jobs when their husbands entered military service.

Characteristics of Extra Workers in the Labor Force, April 1944 [9]

Altogether, the increase in the labor force during the 4 years ending in April 1944 exceeded normal expectations by 6.7 million. For purposes of convenience in describing their characteristics, the extra workers may be divided into the following groups:

		Number[1] *(in millions)*
All groups	Normally students, housewives, retired or others not working or seeking work in paid employment	6. 7
Boys and girls, 14–19	Mostly from school and college	2. 8
Young men, 20–24	Mostly from college	. 5
Young women, 20–24	Mostly service wives	. 4
Women, 35–64	Mostly married women with no young children	1. 5
Men, 25–54	Mostly from the "fringes" of the labor market	. 7
Men, 55 and over	Mostly persons who have postponed retirement	. 8

[1] These data are not comparable to similar data appearing in the August 1943 and February 1944 issues of the Monthly Labor Review. See prefatory note to table 2.

More detailed information classified by age and sex is given in chart 2 and tables 2 and 6.

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[6] U. S. Office of Education Circular No. 227: Some Effects of the War on Public Schools, 1942–43 and 1943–44, by Emory M. Foster. Washington, 1944.

[7] U. S. Office of Education Circular No. 228: Effects of the War upon Colleges, 1943–44, by Henry G. Badger and Benjamin W. Frazier. Washington, 1944.

[8] A Census Bureau sample survey taken in February 1944 found 2,760,000 women in the United States with husbands absent in the armed forces. See Census release P-S, No. 1.

[9] This section will be confined to a description of the characteristics of the extra workers in the labor force. For a brief discussion of the extent to which these workers represent temporary or permanent additions to the labor force, see Factors Determining Post-War Job Transfers and Unemployment, in Monthly Labor Review, February 1944 (p. 272).

CHART 2

ESTIMATED EXCESS OF APRIL 1944 LABOR FORCE OVER "NORMAL"

CLASSIFIED BY AGE AND SEX

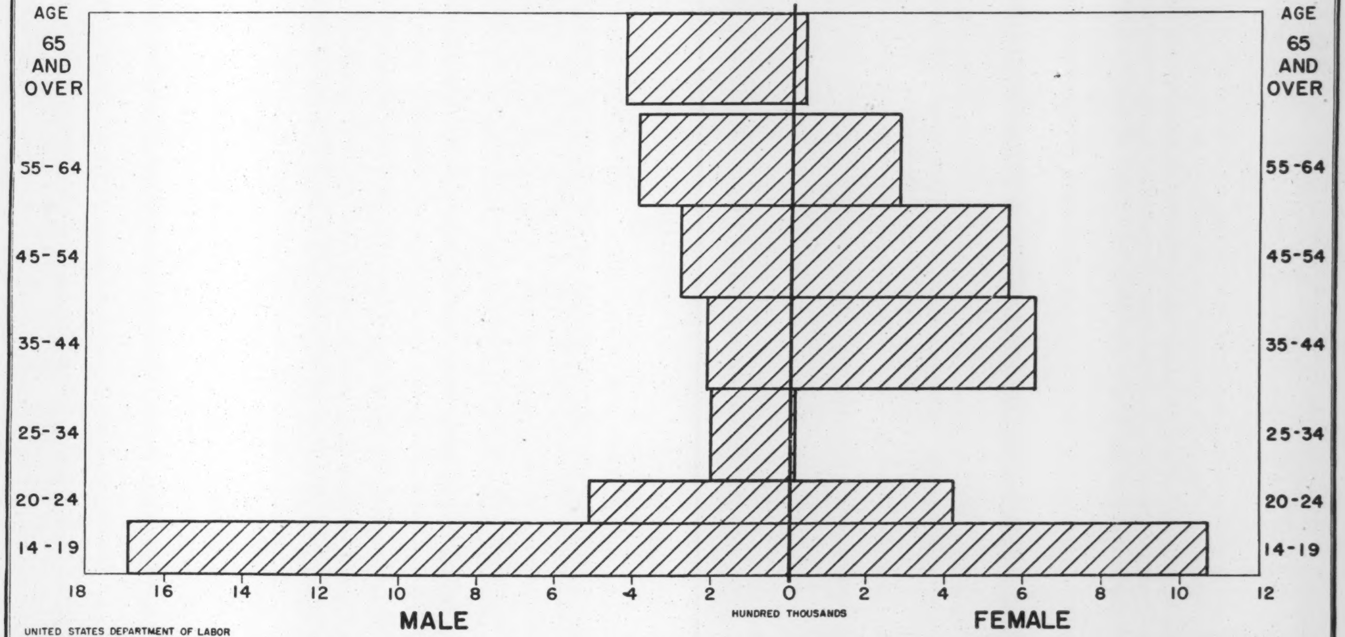

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TABLE 2.—*Estimated Excess of April 1944 Labor Force over "Normal," Classified by Age and Sex* [1]

[Data in this table are not comparable to similar data appearing in the August 1943 and February 1944 issues of the Monthly Labor Review because basic labor-force estimates have since been revised. See Monthly Labor Review, May 1944, pages 1118 and 1119]

Age group	Estimated excess (in thousands)		
	Both sexes	Males	Females
Total, 14 years and over [2]	6,700	3,700	3,000
14–19 years [2]	2,760	1,690	1,070
14–17 years	1,730	1,090	640
18–19 years	1,030	600	430
20–24 years	930	510	420
25–34 years	210	200	10
35–44 years	840	210	630
45–54 years	840	280	560
55–64 years	670	390	280
65 years and over	450	420	30

[1] Based on comparisons between (1) estimates of actual labor force compiled from data on civilian labor force from the Bureau of the Census Monthly Report on the Labor Force plus unofficial estimates of armed forces; and (2) estimates of "normal" labor force adapted from Census Bureau release P–44, No. 12. Actual labor-force estimates were adjusted to exclude an estimated 200,000 teen-age persons on temporary jobs who were included in the Census enumeration for April 1944 because the Census week coincided with Easter week. Adjustments were made on the basis of interpolations between March and May and experience in previous years.

[2] The excess in the teen-age group is somewhat overstated because the "normal" labor-force estimates refer to the last week in March, whereas the actual estimates refer to the first week in April. There is a slight seasonal rise between these two weeks.

SCHOOL AND COLLEGE AGE GROUPS

About 3.3 million, or approximately half, of the abnormal wartime increase in the labor force has been supplied from young persons who would normally be devoting full time to their schooling. Many of these youths, however, have not given up their schooling completely. Large numbers, especially among the 1.7 million under 18 years of age, are working part time while continuing to attend school. In Baltimore, Md., for example, one-third of the students in high school and junior high school have part-time jobs. Since Baltimore is an area of acute labor shortage, this proportion is probably higher than that prevailing in the country as a whole. Nevertheless it is an indication that substantial numbers of the boys and girls in the labor force are continuing to attend school. In addition, a great many young men in the armed forces have been able to continue their college or university training on an accelerated basis under special Army and Navy programs [10] and others have been given special college courses in technical subjects as part of their military training. Military enrollments in colleges, universities, and professional schools increased by more than 350,000 between the autumn of 1939 and the autumn of 1943. This was more than offset, however, by a decline of 600,000 (560,000 men and 40,000 women) or 44 percent in civilian enrollments.[11] At the same time public-school enrollment of boys and girls aged 15 years and over dropped by approximately 1,700,000 (900,000 boys and 800,000 girls) or 30 percent between the school years of 1939–40 and 1943–44.[11] About 250,000 of this drop in enrollment was caused by a decline in the teen-age population and the remaining 1,450,000 is the effect of premature withdrawals from school.

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[10] These programs (Army Specialized Training Program, Army Air Forces Cadet Training Program, and the Navy V–5, V–7, and V–12 programs) were drastically curtailed, however, during the closing months of 1943 and the first half of 1944.

[11] See sources cited in footnotes 6 and 7.

Although many of the youths who took jobs in industry or entered the armed forces were not cut off completely from formal education, it can be seen that the drop in high-school and college enrollments occasioned by the war has been large enough to cause a serious educational deficit among persons now in their teens or early twenties. Many of those whose schooling was interrupted by the war have already reached the age at which they normally would have left school and many others will reach that age by the time the war is over. For this reason it is important to encourage the return to school of persons whose education has been interrupted, not only through measures for financial aid such as those included in the recently enacted "G. I. Bill of Rights," [12] but also through the adoption by schools and colleges of programs designed to meet the educational needs of an older and more mature group of students.

WOMEN UNDER 35 YEARS OF AGE [13]

The labor-market activity of women between the ages of 20 and 35 has been affected by a variety of offsetting factors. On the one hand, general gains in family income, increases in marriage and birth rates, and dependency features of Selective Service regulations have acted as a check on their participation. On the other hand, the drafting of millions of young married men has caused an abnormally high rate of participation among their wives. Approximately half of the women with husbands away in the armed forces are in the labor force as compared with less than one-fifth of the other married women. Part of this difference is caused by the relatively young age distribution of service wives; but even age for age, the proportion of workers among service wives is between two and three times the proportion among women with husbands present (table 3). This relationship holds true for women with young children as well as for those without young children (table 4).

The easy availability of jobs and the wartime pressure to recruit women workers have also brought a number of single young women into the labor market who normally would not seek employment. Increases from this source, however, have been limited by the fact that, even in normal times, there are relatively few single young women who do not work or seek work when their health and household responsibilities will permit them to do so.

Among women between 20 and 25 years of age the participation of service wives in the labor force and the wartime pressures to enter the labor market, if household responsibilities permit, have overbalanced the effect of increased marriage and birth rates, so that the number of workers in this group exceeds normal expectations by about 400,000. In the 25–34 group, however, the various factors have approximately offset each other, so that in April 1944 there was no significant deviation from the "normal."

If it were not for an abnormally high proportion of workers among the service wives, the number of women aged 20–34 in the wartime labor market would probably be somewhat below the "normal" based on pre-war trends. Since 1940 there has been a marked increase in the proportion of young women who are married, and, in view of the rise in birth rates,[14] this has no doubt been accompanied by a similar increase in the proportion with young children. Table 5 shows comparative figures on marital status of young women in April 1940 and February 1944.

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[12] Public Law 346, 78th Congress, 2d Session, approved June 22, 1944.

[13] This section is based largely on an unpublished memorandum by Lester M. Pearlman of the Bureau of Labor Statistics.

TABLE 3.—*Women in the Civilian Labor Force, by Marital Status and Age, March 1940 and February 1944* [1]

Age group	All women [2]		Single		Married [3]			
						1944 [4]		
	1940	1944 [4]	1940	1944 [4]	1940 total	Total	Husband present	Husband absent in armed forces
	Number (in thousands)							
Total, 14 years and over	13,008	16,630	6,377	6,940	3,919	6,790	5,410	1,380
14–19 years	1,396	2,130	1,307	1,930	61	190	(5)	(5)
20–24 years	2,698	3,130	2,052	2,110	492	900	400	500
25–34 years	3,593	3,860	1,615	1,380	1,428	2,020	1,410	610
35–44 years	2,488	3,600	694	830	1,075	2,010	1,880	130
45 years and over	2,833	3,910	709	690	863	1,670	1,650	(5)
	Labor-force-participation rates (percent) [6]							
Total, 14 years and over	25.8	31.8	45.5	54.9	13.8	21.6	18.9	50.0
14–19 years	18.9	30.6	19.7	31.3	9.3	25.7	(5)	(5)
20–24 years	45.6	52.3	73.1	86.1	17.3	27.1	17.3	49.0
25–34 years	33.3	35.4	78.9	84.1	18.1	23.6	19.0	54.0
35–44 years	27.2	36.5	73.4	80.6	15.3	25.9	25.1	56.5
45 years and over	16.4	21.0	45.7	50.7	8.6	15.1	15.0	(5)

[1] Source: (1) March 1940—16th Population Census, 1940, The Labor Force (Sample Statistics), Employment and Personal Characteristics; (2) February 1944—Bureau of the Census, Monthly Report on the Labor Force.

[2] Includes approximately 2.7 million women in 1940 and 2.9 million in 1944 in marital status categories (widowed, divorced, separated, and married with civilian husband absent) not shown separately in table.

[3] In 1940, "married" includes only married women with husbands present in the household. In 1944 this category also includes married women with husbands absent in the armed forces. There are no available data on the number of women whose husbands were absent in the armed forces in 1940, but the number was not great enough to affect the figures significantly.

[4] The 1944 data presented in this table are based on a small cross-section of the population and are subject to a certain amount of sampling error. In general, estimates for categories containing 1,000,000 persons or more are subject to rather small sampling error and may be considered a reliable indication of the number of persons in these categories. On the other hand, the estimates for categories containing fewer than 1,000,000 persons are subject to larger sampling errors and should be interpreted as indicating only general relationships among the characteristics shown. The error that may be expected is proportionately largest for those categories having the smallest numbers.

[5] Number of persons in these categories too small to permit estimate on basis of 1944 sample statistics.

[6] Labor force as a percent of population. Rates for 1940 are based on total population, whereas rates for 1944 are based on the noninstitutional civilian population. Differences resulting from this incomparability, however, are insignificant.

This shift in marital status and the concomitant rise in birth rates would normally have caused a considerable reduction in the number of young women in the labor market, because of the obvious fact that most women do not ordinarily continue to work outside the home after they are married and the great majority of those who do continue to work do so only until they have children. In the age group 25–34, for example, the proportion of workers among single women in 1940 was 78.9 percent as compared with 33.4 percent among

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[14] The birth rate in the United States rose from 17.9 per 1,000 of population in 1940 to 21.9 per 1,000 of population in 1943. (See Bureau of the Census: Vital Statistics—Special Reports, Vol. 19, No. 1, December 23, 1943; and Monthly Vital Statistics Bulletin, February 24, 1944.)

TABLE 4.—*Married Women Aged 18–64 in the Civilian Labor Force, by Age and Dependency Status, March 1940 and February 1944* [1]

Age group	All married women, 18–64 [2]				Without children under 10				With children under 10			
	1940 [3] total	1944 [4]			1940 total	1944 [4]			1940 total	1944 [4]		
		Total	Husband present	Husband absent in armed forces		Total	Husband present	Husband absent in armed forces		Total	Husband present	Husband absent in armed forces
	Number (in thousands)											
Total, 18–64 years	3,671	6,700	5,340	1,360	2,838	5,230	4,150	1,080	833	1,470	1,190	280
18–24 years	521	1,070	470	600	403	800	330	470	118	270	140	130
25–34 years	1,375	2,020	1,410	610	926	1,310	840	470	449	710	570	140
35–44 years	1,018	2,010	1,880	130	795	1,610	1,490	120	223	400	390	(5)
45–64 years	757	1,600	1,580	(5)	714	1,510	1,490	(5)	43	(5)	(5)	(5)
	Labor-force-participation rates (percent) [6]											
Total, 18–64 years	13.8	22.7	19.9	50.6	17.7	30.0	26.1	71.1	7.8	12.1	10.9	23.9
18–24 years	15.6	27.2	17.7	46.9	27.3	51.0	38.4	66.2	6.4	11.4	7.8	22.8
25–34 years	17.4	23.6	19.0	54.0	33.4	49.6	41.0	79.7	8.8	12.0	10.6	25.9
35–44 years	14.6	26.1	25.1	56.5	19.7	34.9	33.6	66.7	7.6	12.9	12.8	(5)
45–64 years	9.0	17.1	17.0	(5)	9.2	17.6	17.4	(5)	5.9	(5)	(5)	(5)

[1] Source: (1) March 1940—16th Population Census, 1940, The Labor Force (Sample Statistics), Employment and Family Characteristics of Women; (2) February 1944—Bureau of the Census, Monthly Report on the Labor Force.

[2] See table 3, footnote 3.

[3] Figures differ slightly from corresponding figures in table 3, since the data are based on different samples. For a description of the two samples, see 16th Population Census, 1940, Employment and Family Characteristics of Women, pp. 7 and 8.

[4] Data for 1944 are based on a small cross section of the population; see table 3, footnote 4.

[5] Number of persons in these categories too small to permit estimate on basis of 1944 sample statistics.

[6] See table 3, footnote 6.

TABLE 5.—*Marital Status of Women Aged 20–34 Years,[1] April 1940 and February 1944*

Marital status	Number of women (in thousands) aged—				Percentage distribution			
	20–24 years		25–34 years		20–24 years		25–34 years	
	1940	1944	1940	1944	1940	1944	1940	1944
Total	5,895	5,980	10,818	10,900	100.0	100.0	100.0	100.0
Single	2,781	2,440	2,050	1,640	47.2	40.8	18.9	15.0
Married, total	3,026	3,470	8,341	8,910	51.3	58.0	77.1	81.7
Husband present	2,850	2,310	7,933	7,430	48.3	38.6	73.3	68.1
Husband absent, in armed forces	(2)	1,020	(2)	1,130	(2)	17.1	(2)	10.4
Husband absent, other reasons	176	140	408	350	3.0	2.3	3.8	3.2
Widowed and divorced	88	70	427	350	1.5	1.2	3.9	3.2

[1] Source: Census Bureau Release PS—No. 1. Figures for 1940 refer to the total population, whereas figures for 1944 refer only to the civilian noninstitutional population. The exclusion of the relatively small number of women in the armed forces and in institutions, however, does not significantly affect the general comparisons shown.

[2] Statistics for the very small number of women with husbands in the armed forces in 1940 are not available.

married women with no young children and only 8.8 percent among married women with young children.[15]

The shift toward more young married women and more women with children has already been halted and reversed. Both the marriage rate and the birth rate have passed their wartime peaks and have entered a period of decline which is expected to continue until the war is over. The number of marriageable persons has been reduced to a low point by the many marriages in anticipation of military service and, in addition, millions of marriageable men and husbands are absent in the armed forces. The decline in marriages and births now under way should tend to keep up the rate of labor-market participation among young women, at least until the end of the war in Europe.

WOMEN OVER 35 YEARS OF AGE

Women between 35 and 65 years of age have been a major source of additional wartime labor, contributing 1.5 million to the total of 6.7 million extra workers in the labor force in April 1944. The rate of labor-market participation for this group exceeded normal expectations by approximately 25 percent (table 6). It is not surprising that the great majority of the extra workers among adult women are over 35 years of age. This group has been little affected by the wartime increase in marriage and birth rates. Moreover, there are large

TABLE 6.—*Estimated Labor-Force-Participation Rates, by Age and Sex, March 1940 and April 1944*

Age and sex	Labor force as percent of population			
	March 1940 [1]	April 1944 [2]		
		Normal	Actual	Percent excess of actual over normal
Total, 14 years and over	52.8	53.1	59.5	+12
Males, 14 years and over	79.7	79.3	86.4	+9
14–19 years	35.6	34.4	57.9	+68
14–17 years	19.2	17.3	40.5	+134
18–19 years	67.6	67.3	91.5	+36
20–24 years	88.5	88.5	97.2	+10
25–34 years	95.8	95.7	97.8	+2
35–44 years	95.4	95.0	97.2	+2
45–54 years	92.7	91.7	95.2	+4
55–64 years	84.6	83.3	89.9	+8
65 years and over	42.2	39.6	48.5	+22
Females, 14 years and over	25.7	27.1	32.8	+21
14–19 years	19.0	17.9	33.2	+86
14–17 years	7.6	5.9	19.8	+236
18–19 years	40.7	40.7	58.6	+44
20–24 years	45.6	46.9	53.8	+15
25–34 years	33.3	36.0	36.1	(3)
35–44 years	27.3	30.6	37.2	+22
45–54 years	22.4	24.0	31.0	+29
55–64 years	16.6	17.3	22.0	+27
65 years and over	6.0	5.6	6.3	+12

[1] Based on data from the 1940 Census adjusted for errors in classification (see Census Release P–44, No. 6) and for 150,000 members of the armed forces not included in the 1940 Census enumeration.

[2] Based on labor-force data described in table 2 (footnote 1) and population estimates from Bureau of the Census.

[3] Excess of less than half of 1 percent.

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[15] Bureau of the Census, 16th Population Census, 1940, The Labor Force (Sample Statistics), Employment and Family Characteristics of Women.

numbers of married women over 35 normally outside the labor force and without responsibility for the care of young children. Of some 13.6 million married women aged 35–64 outside the labor force in 1940, 10.2 million or 75 percent did not have any children under 10 years of age. Among married women aged 18–34, on the other hand, there were 9.3 million not in paid work, of whom only 2.9 million or 31 percent were without responsibility for the care of young children.[16]

Very few women remain in the labor force after they have reached the age of 65 and the wartime experience has done little to change this situation. The few women in this age group who have postponed their retirement do not form a significant part of the extra wartime workers.

MEN 25–54 YEARS OF AGE

Wartime increases in labor-market participation of men aged 25–54 have necessarily been relatively small because there are very few able-bodied men of these ages who are not normally in the labor force. Even though about three-fifths of the men in this age group outside of institutions who were not in the labor force in 1940 had entered the labor market by 1944, the excess over "normal" amounted to only 700,000 or about 2 percent. For the most part these 700,000 are from the "fringes" of the labor market—the men who in pre-war days, sought work only occasionally or intermittently and the men on the borderline between employability and unemployability.

The men in this borderline group are the first to be discharged when business slumps and the last to be hired when business picks up again. For all practical purposes they are unemployable during a period of large labor surplus such as that which preceded the war. Many of these men were out of the labor market in 1940 because they had become convinced they were unable to work or because they were no longer willing to expose themselves to the rebuffs of the labor market after years of unsuccessful search for a job.

The 700,000 extra workers among men aged 25–54 probably include a significant number who, formerly, were occasional or intermittent workers. Since the "labor force" is defined to include only persons working or seeking work during a specific week, there is always a certain number of intermittent workers outside the labor force at any one time. It is "common practice for many migratory casual workers to spend part of the year on the road working or seeking work and then to withdraw from the labor market during the period when the chances of finding work are small."[17] The availability of steady jobs and the pressure of wartime demands for labor have probably reduced significantly the number of occasional workers who may be outside the labor force at any one time.

Another factor, which contributed about 100,000 to the excess over "normal" in the 25–54 age group, is the interruption of pre-war trends toward longer schooling and earlier retirement which had caused a slight downward movement in labor-market participation among men of this age.

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[16] Figures quoted include only married women with husbands present.

[17] WPA Research Monograph VII: The Migratory Casual Worker, by John N. Webb. Washington, 1937.

MEN 55 YEARS OF AGE AND OVER

The interruption of trends toward earlier retirement was more important, however, among men over 55 years of age—particularly in the group over the age of 65. Although the percentage of these older men in the labor market would ordinarily have been expected to decline between 1940 and 1944, there was actually a considerable increase (table 6), so that the rate of labor-market participation exceeded normal expectations by about 22 percent for men aged 65 and over and about 8 percent for men aged 55–64. Altogether the labor force in April 1944 included about 800,000 extra male workers aged 55 and over. For the most part, these are men who have continued working beyond the age when they normally would have retired. In addition, some have reentered the labor force from retirement and others more nearly resemble the persons from the "fringes" of the labor market found in greater numbers among the extra workers under 55 years of age.

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Employment in Government-Owned, Privately Operated New War Plants[1]

CURTAILMENT of war production, which began at the end of 1943, is already creating many problems for workers, employers, and the Government. The major problem at present is the reemployment of workers who have been affected by "cut-backs." As many plants in tight labor-market areas still need workers, the problem is not yet of large proportions, but will be critical in the immediate post-war period. The termination of contracts and the speedy disposal of Government industrial facilities are other pressing post-war problems.

Some light is thrown on these problems by a special survey of certain important aspects of 397 Government-owned, privately operated new war plants. These plants employed over 2 million persons and represent about 8 billion dollars of public investment. This study, conducted by the Bureau of Labor Statistics, in cooperation with the Bureau of Foreign and Domestic Commerce, consisted in relating the information on employment, pay rolls, and man-hours as of September 1943 to War Production Board information on investment in the facilities studied. It covered the precise geographical location of these Government-owned plants, the amount of investment in each, the type of production, and the number of men and women workers employed.

The general criteria for inclusion of a plant in this survey were that (1) it was a new war plant with a public investment of at least $500,000, (2) the private investment in the new facility did not exceed 5 percent of the total public investment, and (3) the construction portion of the total cost amounted to at least $200,000. The financial limit in regard to private investment was stipulated with the idea that, where there was only a minimum private investment, the disposition problem would be the concern of the Government primarily. The construction-cost minimum of $200,000 was used as a basis for separating new war plants from those in which public investment went mainly into machinery and equipment for existing plants.

Certain other plants not meeting these criteria were included, however. There were 15 plants, mostly in the shipbuilding and aircraft industries, in which the private investment ranged as high as 9.3 percent of public investment, but in which the public investment was so large as to make it likely that large numbers of workers would be affected by demobilization. There were 7 Defense Corporation plants, the construction costs of which were less than $200,000; these were added when it was determined from a recent Defense Plant Corporation listing that the facilities actually were new plants.

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[1] Prepared by Clara F. Schloss of the Employment Statistics Division. Abe Rothman of this Division formulated and directed the preparation of the tabulations. M. Elizabeth Fite of the Post-War Labor Problems Division developed the criteria on which the sample was based and participated throughout in the development of the study. This project was conducted under the general direction of D. H. Davenport of the Bureau of Labor Statistics and D. Stevens Wilson of the Department of Commerce.

Wage-Earner Employment, September 1943

The present analysis is confined to 383 manufacturing plants, although the survey covered a total of 397 establishments, of which 14 were mines and modification centers. As most of the Government investment went into the munitions industries, 97.5 percent of the workers in Government-owned, privately operated plants—comprising one-fifth of all wage earners in the munitions industries in September 1943—were engaged in manufacturing the implements of war. Wage-earner employment in the 383 Government-owned, privately operated new manufacturing plants in September 1943 and the ratio of reported wage earners in such plants to all wage earners in the group were as follows:

	All manufacturing	*Munitions industries*
Number of wage earners in reporting Government-owned, privately operated plants	1,760,000	1,718,000
Estimated number of all wage earners	13,935,000	8,077,000
Percent of all workers in Government-owned, privately operated plants	12.6	21.3

MAJOR INDUSTRY GROUPS

The transportation-equipment group employed 70 percent of the wage earners in the Government-owned, privately operated new plants. This group consists of establishments engaged in shipbuilding and in manufacturing airplanes, railroad equipment, and some ordnance items such as tanks and combat vehicles. The group as a whole employed 2¼ million wage earners in September, more than half of whom were in the Government-owned plants. Any curtailment of the aircraft and shipbuilding programs would, therefore, be of primary interest to the 1¼ million workers in the Government-owned transportation-equipment group of plants.

The chemicals and allied products group, which includes the small-arms ammunition industry, accounted for 11 percent of the employees in the Government-owned plants. More than a quarter of all the wage earners in the chemicals group were in the 82 plants included in this survey. Because of the accumulation of large stock piles of small-arms ammunition, this portion of the chemicals group has been reducing employment since July 1943. In September 1943, four-fifths of the wage earners in the small-arms ammunition industry were in Government-owned, privately operated plants. Since this industry was among the first to be curtailed, the problem of reemploying its workers is confronting the Government at the present time. Of the 4 plants which have been shut down since this industry has been cutting back, 2 were included in the Bureau's survey.

The iron and steel group is the only other one employing more than 150,000 of the wage earners reporting in this survey. Almost 9 percent of the 1,760,000 wage earners were in plants in this group. The 155,000 wage earners in the reporting Government-owned, privately operated iron and steel plants comprise 9 percent of this group's total employment (table 1).

TABLE 1.—*Wage-Earner Employment in 383 Government-Owned, Privately Operated New Manufacturing Plants, September 1943, by Major Industry Group*

Industry group	Number of Government-owned plants reporting	Wage earners in Government-owned plants		Estimated number of all wage earners (in thousands)	Wage earners in Government-owned plants as percent of group total
		Number (in thousands)	Percent		
All industry groups	383	1,760	100.0	13,935	12.6
Transportation equipment, except automobiles	131	1,231	69.9	2,299	53.5
Chemicals and allied products	82	192	10.9	738	26.0
Iron and steel and their products	62	155	8.8	1,721	9.0
Automobiles	7	51	2.9	734	6.9
Nonferrous metals and their products	45	38	2.2	417	9.1
Electrical machinery	15	27	1.5	725	3.7
Machinery, except electrical	18	20	1.1	1,248	1.6
Other	23	46	2.7	6,053	.8

TABLE 2.—*Employment and Public Investment in 397 Government-Owned, Privately Operated Plants, September 1943*

BUREAU OF LABOR STATISTICS INDUSTRY CLASSIFICATIONS

Industry group	Number of reports	Number of wage earners	Number of women earners	Total number of employees	Total number of women	Public investment (in millions)
All industry groups	397	1,778,347	469,668	2,096,795	599,070	$7,988.6
Manufacturing:						
Paper and allied products	1	549	178	658	229	.5
Chemicals and allied products	82	191,427	68,877	225,430	81,781	2,799.6
Products of petroleum and coal	7	1,151	79	1,796	209	64.8
Rubber products	1	4,139	2,070	4,477	2,210	18.9
Stone, clay, and glass products	2	697	378	762	433	2.1
Iron and steel and their products	62	154,486	65,122	183,248	76,854	1,220.6
Nonferrous metals and their products	45	38,269	4,694	46,276	7,188	841.9
Electrical machinery	15	27,326	15,611	34,107	18,402	102.6
Machinery, except electrical	18	19,914	5,525	23,558	6,944	100.7
Automobiles	7	51,451	18,858	60,598	22,154	150.5
Transportation equipment, except automobiles	131	1,231,160	266,528	1,445,862	355,943	2,490.8
Miscellaneous industries	12	39,333	16,305	45,973	18,906	129.3
Nonmanufacturing[1]	14	18,445	5,443	24,050	7,817	66.3

WAR PRODUCTION BOARD INDUSTRY CLASSIFICATIONS

Industry group	Number of reports	Number of wage earners	Number of women earners	Total number of employees	Total number of women	Public investment (in millions)
All industry groups	397	1,778,347	469,668	2,096,795	599,070	$7,998.6
Manufacturing:						
Aircraft assembly	47	399,832	153,319	510,679	202,771	848.2
Aircraft engines	15	101,123	27,561	111,719	30,842	764.3
Aircraft parts	35	97,005	29,988	116,999	37,937	353.0
Shipbuilding	57	708,440	85,156	798,068	120,375	637.7
Shipbuilding, parts and accessories	4	9,297	2,714	12,477	3,809	57.1
Combat and other motor vehicles	5	10,695	2,014	13,485	3,066	160.6
Guns and fire-control equipment	15	40,619	12,315	49,410	15,487	178.6
Ammunition, shells, bombs, etc	28	164,653	77,255	185,310	86,127	761.6
Explosives	22	49,057	5,774	63,221	10,506	1,504.0
Ammunition assembling and loading	24	87,334	44,535	103,696	51,307	756.0
Aluminum, except castings	15	11,377	471	13,369	813	229.1
Aluminum castings	15	14,417	3,144	16,641	4,088	292.1
Magnesium and products	15	12,978	729	16,969	1,925	348.6
Communication equipment	9	13,685	9,810	16,903	11,223	15.3
Synthetic rubber	20	5,912	529	7,765	1,015	281.3
Aviation gasoline	3	698	12	1,150	89	15.3
Iron and steel	16	12,879	1,515	15,453	2,573	189.4
Other nonferrous metals	3	1,950	239	2,151	314	13.1
Machinery and electrical equipment, excluding communication equipment	9	7,024	2,554	8,352	3,151	51.8
Other chemicals	27	8,656	592	11,077	1,502	445.0
Miscellaneous manufacturing	10	20,057	9,442	21,116	10,093	70.9
Nonmanufacturing[1]	3	659	-------	785	57	15.6

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[1] Mining and modification centers.

Further industrial details regarding all 397 plants included in this survey are presented in table 2. The data are classified first according to the Bureau of Labor Statistics major industry groups and then according to War Production Board industry classifications.

REGIONAL DISTRIBUTION

In actual numbers, the impact of demobilization will be most severe in the East North Central region (Ohio, Indiana, Illinois, Michigan, and Wisconsin) where 420,000 wage earners are employed in Government-owned, privately operated plants. The Pacific Coast region (Washington, Oregon, and California) will be a close second with 383,000 wage earners, or 29 percent of the total employment in that region; it will probably be the most critical area. The East North Central region had only 11 percent of its wage earners in the Government-owned plants, but the West South Central region (Arkansas, Louisiana, Oklahoma, and Texas), which accounted for only 184,000 wage earners, had 31 percent of all its workers in Government-owned, privately operated establishments.

Data on wage-earner employment in the 383 Government-owned, privately operated new manufacturing plants in September 1943, by region, are shown in the accompanying statement.

	Wage earners in reporting Government-owned plants	
	Number	*Percent of all manufacturing wage earners*
All regions	1, 760, 000	12. 6
West South Central	184, 000	30. 7
Pacific	383, 000	29. 1
Mountain	35, 000	25. 9
West North Central	168, 000	21. 5
South Atlantic	190, 000	12. 2
East North Central	420, 000	10. 9
East South Central	69, 000	10. 8
New England	99, 000	6. 8
Middle Atlantic	212, 000	5. 9

Employment and investment data, by States, for the 397 plants covered (including the mining and modification centers) are shown in table 3.

TABLE 3.—*Employment and Public Investment in 397 Government-Owned, Privately Operated Plants, by State, September 1943*

State	Number of wage earners	Number of women wage earners	Total number of employees	Total number of women	Public investment (in millions)
All States	1,778,347	469,668	2,096,795	599,070	$7,988.6
Alabama	36,438	2,711	42,992	5,150	259.1
Arkansas	11,364	5,176	13,080	5,884	161.3
Arizona	7,556	2,802	10,182	3,792	55.2
California	258,112	54,120	299,426	73,915	427.1
Colorado	16,348	7,942	18,989	9,210	60.7
Connecticut	18,714	3,164	21,041	3,961	74.6
Delaware	9,671	1,207	10,866	1,752	14.8
Florida	43,909	3,040	50,181	5,158	42.8
Georgia	37,063	7,517	44,905	11,133	94.7
Illinois	82,492	22,853	102,281	30,809	820.4
Indiana	87,946	23,433	103,790	29,094	549.1
Iowa	19,003	8,041	21,600	9,402	92.7
Kansas	42,285	15,950	54,598	21,429	298.0
Kentucky	10,308	2,852	13,847	3,969	128.0
Louisiana	29,123	3,781	34,269	5,998	198.8
Maine	25,341	3,116	27,948	3,919	24.2
Maryland	60,179	10,200	65,263	12,944	59.0
Massachusetts	39,094	8,131	46,725	10,822	101.3
Michigan	89,012	28,301	100,359	32,091	413.0
Minnesota	24,841	11,360	27,925	12,647	94.4
Mississippi	10,076	1,932	11,834	2,554	29.6
Missouri	74,305	31,516	87,083	35,808	449.8
Nebraska	13,351	3,701	17,171	5,781	85.7
New Jersey	38,632	7,488	44,268	9,308	66.8
New Mexico	302	----------	365	3	2.6
Nevada	4,659	105	6,307	677	132.9
New York	107,941	37,787	129,451	46,184	349.4
North Carolina	21,813	4,294	23,841	5,228	42.6
Ohio	132,660	46,845	156,724	55,985	739.4
Oklahoma	33,128	14,751	44,223	20,160	166.9
Oregon	62,492	15,368	72,560	19,593	63.9
Pennsylvania	65,673	13,653	81,013	19,594	365.9
Rhode Island	15,449	1,046	16,659	1,652	25.9
South Carolina	2,228	36	2,628	158	4.5
Tennessee	15,624	4,517	20,772	6,296	242.8
Texas	112,875	28,363	134,609	36,827	538.1
Utah	10,307	5,684	11,885	6,285	44.4
Virginia	8,790	2,302	9,886	2,582	102.3
Washington	62,763	12,235	72,601	16,246	177.0
West Virginia	6,431	915	7,702	1,309	197.2
Wisconsin	28,718	10,922	33,353	13,074	209.9
Wyoming	1,331	511	1,593	687	2.7

WOMEN WAGE EARNERS

It is likely that some of the employees in Government-owned, privately operated new plants will not be interested in finding other jobs after the war. The voluntary retirement of women from the labor force in the immediate post-war period must be taken into account. The 383 Government-owned plants in September 1943 employed 464,000 women, or more than a quarter of the total employment in such plants. The proportion of women in manufacturing as a whole and in the munitions industries, as well as in the Government-owned, privately operated new manufacturing plants, is shown below:

	All manufacturing	*Munitions industries*
Number of women wage earners in 383 reporting Government-owned manufacturing plants	464,000	447,000
Estimated number of all women wage earners	4,459,000	2,026,000
Women as percent of all wage earners—		
In Government-owned plants	26.4	26.0
In all plants	32.0	25.1

When comparison is made for individual groups of industries, the Government-owned, privately operated plants are found to employ an unusually large proportion of women. In the iron and steel group, 42 percent of the wage earners in the reporting plants in September 1943 were women, as compared with 20 percent for the industry as a whole. In the electrical-machinery group the respective figures were 59 and 47 percent. Only in the transportation-equipment group was the proportion of women in Government-owned plants as low as in the privately owned plants. The proportion of women wage earners in 297 Government-owned, privately operated new manufacturing plants in September 1943 is shown in the following statement, for the major industry groups.

	Number of women wage earners in Government-owned plants	*Women as percent of all wage earners in—*	
		Government-owned plants	*Industry group*
Transportation-equipment industry	267, 000	21. 7	21. 6
Chemicals industry	69, 000	35. 9	31. 6
Iron and steel industry	65, 000	41. 9	20. 3
Automobile industry	19, 000	37. 3	25. 5
Electrical-machinery industry	16, 000	59. 3	47. 2

Public Investment in Government-Owned Plants

The total public investment in the 383 Government-owned, privately operated manufacturing plants amounted to 7.9 billion dollars. More than a third, 2.7 billion dollars, of this investment was in plants in the East North Central region which employed the largest number of wage earners. Another quarter, 2 billion dollars, was divided equally between the West South Central and West North Central regions which together employed 352 thousand wage earners (table 4). In contrast to this was the Pacific Coast region which employed 383 thousand wage earners in Government-owned plants but had a public investment of only 664 million dollars, or 8 percent of the total.

TABLE 4.—*Amount of Public Investment in 383 Government-Owned, Privately Operated New Manufacturing Plants, September 1943, by Major Industry Group and by Region*

Industry group	Public investment		Region	Public investment	
	Amount (in millions)	Percent of total		Amount (in millions)	Percent of total
Chemicals and allied products	$2, 800	35. 3	East North Central	$2, 726	34. 4
Transportation equipment, except automobiles	2, 491	31. 4	West South Central	1, 062	13. 4
Iron and steel and their products	1, 220	15. 4	West North Central	1, 013	12. 8
Nonferrous metals and their products	842	10. 6	Middle Atlantic	782	9. 9
Automobiles	150	1. 9	Pacific	664	8. 4
Electrical machinery	103	1. 3	East South Central	624	7. 9
Machinery, except electrical	100	1. 3	South Atlantic	558	7. 0
Other	216	2. 8	Mountain	267	3. 3
			New England	226	2. 9
Total	7, 922	100. 0	Total	7, 922	100. 0

The disparity between the amount of public money invested and the number of wage earners is most striking when comparison is made by major industry groups. Aircraft plants and shipyards, for instance, are constructed and made ready for large-scale operation with only a minimum of investment. For this reason the transportation-equipment group, with less than one-third of the total public investment, employed almost 70 percent of the wage earners. Similarly, the automobile group (which is also producing aircraft) employed 3 percent of the wage earners, but had about 2 percent of the public investment.

At the other extreme are the nonferrous metals and chemicals groups. Plants in the former group received more than 10 percent of the public investment but employed only 2 percent of the workers; and plants in the latter group received the largest share of the public investment—35 percent—but employed only 11 percent of the wage earners.

Detailed information on employment and public investment in all the 397 plants (manufacturing and nonmanufacturing), classified by amount of public funds invested, is given in table 5.

TABLE 5.—*Employment and Public Investment in 397 Government-Owned, Privately Operated Plants, by Amount of Public Investment, September 1943*

Public investment group	Number of wage earners	Number of women wage earners	Total number of employees	Total number of women	Public investment (in millions)
All groups	1, 778, 347	469, 668	2, 096, 795	599, 070	$7, 988. 6
$500, 000-$749, 000	11, 546	3, 056	13, 682	3, 868	9. 3
$750, 000-$999, 000	4, 601	2, 003	5, 337	2, 281	9. 7
$1,000, 000-$1,999, 000	61, 793	13, 680	69, 540	16, 468	54. 1
$2,000, 000-$2,999, 000	39, 205	12, 487	45, 541	15, 182	62. 4
$3,000, 000-$3,999, 000	45, 459	8, 263	55, 410	12, 461	88. 6
$4,000, 000-$4,999, 000	16, 700	2, 710	18, 935	3, 445	67. 6
$5,000, 000-$7,499, 000	104, 149	22, 631	126, 247	30, 575	214. 6
$7,500, 000-$9,999, 000	66, 820	18, 126	78, 841	22, 840	225. 8
$10,000, 000-$14,999, 000	183, 077	33, 215	213, 011	45, 127	445. 0
$15,000, 000-$19,999, 000	183, 805	44, 140	211, 703	56, 131	575. 6
$20,000, 000-$24,999, 000	289, 481	63, 286	338, 453	83, 878	778. 4
$25,000, 000-$37,499, 000	338, 917	85, 922	399, 096	110, 031	1, 405. 4
$37,500, 000-$49,999, 000	124, 809	51, 633	162, 116	69, 104	616. 8
$50,000, 000-$74,999, 000	115, 738	43, 763	140, 183	53, 767	1, 174. 2
$75,000, 000-$99,999, 000	96, 630	33, 844	109, 077	38, 223	1, 083. 3
$100,000, 000-$149,999, 000	84, 912	29, 449	94, 702	32, 644	844. 4
$150,000, 000 and over	10, 705	1, 460	14, 921	3, 045	333. 4

In addition to the data on employment, industrial classification, geographical location, and investment, 387 manufacturing and nonmanufacturing plants furnished information on pay rolls and man-hours worked. These plants employed 1,754,610 wage earners who received $97,869,536 for a total of 81,720,698 man-hours worked during 1 week, usually that ending nearest the 15th of the month. In table 6, the weekly pay roll and man-hour data are presented by War Production Board industrial classification. Table 7 presents these data by State.

TABLE 6.—*Weekly Pay Rolls and Man-Hours in 387*[1] *Government-Owned, Privately Operated Plants, by WPB Industry Group, September 1943*

WPB industry group	Number of wage earners	Pay roll in 1 week	Number of man-hours worked in week
All groups	1,754,610	$97,869,536	81,720,698
Manufacturing:			
Aircraft assembly	387,246	20,560,596	18,378,679
Aircraft engines	101,123	6,329,537	4,913,249
Aircraft parts	97,005	5,693,478	4,545,876
Shipbuilding	708,440	44,002,335	32,506,891
Shipbuilding, parts and accessories	9,297	488,585	439,141
Combat and other motor vehicles	10,695	631,928	522,439
Guns and fire-control equipment	31,692	1,949,283	1,475,368
Ammunition, shells, bombs, etc	164,653	7,322,232	7,649,922
Explosives	49,057	2,366,033	2,303,025
Ammunition, assembly and loading	87,334	3,269,774	3,898,320
Aluminum, excluding castings	9,968	469,880	461,907
Aluminum castings	13,602	578,921	598,247
Magnesium and products	12,978	755,712	622,559
Communication equipment	13,685	567,489	608,875
Synthetic rubber	5,912	294,554	279,320
Aviation gasoline	698	37,548	31,862
Iron and steel	12,879	707,227	620,324
Other nonferrous metals, excluding communication equipment	1,950	90,747	88,243
Machinery and electrical equipment	7,024	341,029	327,521
Other chemicals	8,656	422,211	400,756
Miscellaneous manufacturing	20,057	954,493	1,016,569
Nonmanufacturing[2]	659	35,944	31,605

[1] 10 firms did not report pay-roll and man-hour data.
[2] Mining and modification centers.

TABLE 7.—*Weekly Pay Rolls and Man-Hours in 387*[1] *Government-Owned, Privately Operated Plants, by State, September 1943*

State	Number of wage earners	Pay roll in 1 week	Number of man-hours worked in week
All States	1,754,610	$97,869,536	81,720,698
Alabama	33,898	1,692,670	1,655,830
Arkansas	11,364	390,028	469,064
Arizona	7,556	375,267	374,495
California	258,112	16,221,812	11,652,996
Colorado	15,084	687,556	712,833
Connecticut	18,714	1,102,813	953,449
Delaware	9,671	544,778	435,368
Florida	43,909	2,572,927	2,016,008
Georgia	37,063	2,169,680	1,755,360
Illinois	82,492	4,478,314	3,961,574
Indiana	87,946	5,026,127	4,232,749
Iowa	19,003	833,765	896,785
Kansas	42,285	2,292,441	2,077,469
Kentucky	9,724	438,117	465,029
Louisiana	29,123	1,677,521	1,363,631
Maine	25,341	1,293,952	1,035,519
Maryland	60,179	3,448,687	2,705,067
Massachusetts	39,094	2,086,312	1,679,644
Michigan	80,085	5,208,190	3,749,550
Minnesota	21,110	1,095,083	1,033,006
Mississippi	10,076	474,394	445,566
Missouri	74,305	$3,350,695	3,449,119
Nebraska	13,351	676,986	627,311
New Jersey	38,632	2,306,871	1,848,071
New Mexico	302	17,065	13,217
Nevada	4,659	328,642	230,646
New York	106,532	5,962,691	5,297,444
North Carolina	21,813	1,094,717	979,389
Ohio	131,477	7,210,644	6,155,689
Oklahoma	33,128	1,601,601	1,534,435
Oregon	62,492	4,179,942	2,746,099
Pennsylvania	64,858	3,723,075	3,294,505
Rhode Island	15,449	865,341	681,977
South Carolina	2,228	138,076	120,173
Tennessee	15,624	586,838	692,889
Texas	110,922	5,462,820	5,115,688
Utah	10,307	444,263	469,936
Virginia	8,790	364,122	405,379
Washington	62,763	3,788,223	2,774,791
West Virginia	6,431	318,575	289,301
Wisconsin	28,718	1,337,915	1,323,647

[1] 10 firms did not report pay-roll and man-hour data.

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Older Workers in Wartime[1]

EVEN in the midst of the world conflict the tragic condition of job-seeking older workers in the late depression is a disturbing memory. However, following the outbreak of the war in Europe and the consequent speeding up of defense activities, the employment situation of men and women in the upper age brackets began to improve. After the declaration of war by the United States, the need for labor intensified and older workers found themselves in great demand. Among the manifestations of this change are the further increase in the number of older workers in the labor force as shown by the Census estimates; the acceleration in placement of such workers by the U. S. Employment Service; the growing numbers of persons returning to remunerative work after having been recipients of old-age benefits under the Social Security Act, and the postponement of the retirement of others who had never drawn such benefits but were eligible for them; and the reduction in number of persons receiving old-age assistance. Other reversals in the attitude towards the utilization of older people are evidenced by the elimination, with few exceptions, of the maximum age limits in U. S. Civil Service examinations; the reinstatement of retired Civil Service employees on Government pay rolls; the retention of Army and Navy officers eligible for retirement; the decline in the number of Forty-Plus clubs; and the appearance in various types of employment of older women, against whom job barriers had been especially formidable.

Census Estimates of Employment in Higher Age Brackets

From October 1942 to October 1943, according to U. S. Bureau of the Census estimates, there was a very considerable expansion in the volume of employment in the older groups of workers in the civilian labor force, as shown in table 1. The increase in the number of persons employed who were 45 years of age and over was 1,500,000, of whom 800,000 were women. Of the additional 200,000 in the number of employed persons 65 years of age and over, 100,000 were women.

The figures in table 1 are unrevised Census estimates, as the revisions which were published before this article went to press included no analysis by age groups.

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[1] Prepared by Mary T. Waggaman of the Bureau's Editorial and Research Division.

Table 1.—*Estimated Civilian Labor Force, Employment and Unemployment, by Age and Sex, in October 1943 and October 1942* [1]

[Source U. S. Department of Commerce, Bureau of the Census]

Employment status and age	Estimated number (millions of persons)					
	Total		Males		Females	
	October 1943	October 1942	October 1943	October 1942	October 1943	October 1942
Total civilian, labor force	52.6	54.0	35.9	39.0	16.7	15.0
14-19 years	5.0	5.6	2.5	3.5	2.5	2.1
20-24 years	4.8	6.2	1.9	3.3	2.9	2.9
25-34 years	11.2	12.1	7.4	8.6	3.8	3.5
35-44 years	12.1	11.8	8.5	8.6	3.6	3.2
45-54 years	10.1	9.8	7.8	7.8	2.3	2.0
55-64 years	6.6	5.9	5.4	4.9	1.2	1.0
65 years and over	2.8	2.6	2.4	2.3	.4	.3
Total persons employed	51.9	52.4	35.5	38.1	16.4	14.3
14-19 years	4.8	5.3	2.5	3.3	2.3	2.0
20-24 years	4.8	6.0	1.9	3.2	2.9	2.8
25-34 years	11.1	11.9	7.3	8.5	3.8	3.4
35-44 years	12.0	11.5	8.5	8.5	3.5	3.0
45-54 years	10.0	9.5	7.7	7.7	2.3	1.8
55-64 years	6.5	5.7	5.3	4.7	1.2	1.0
65 years and over	2.7	2.5	2.3	2.2	.4	.3
Total persons unemployed [2]	.7	1.6	.4	.9	.3	.7
14-19 years	.2	.3	(3)	.2	.2	.1
20-24 years	(3)	.2	(3)	.1	(3)	.1
25-34 years	.1	.2	.1	.1	(3)	.1
35-44 years	.1	.3	(3)	.1	(3)	.2
45-54 years	.1	.3	.1	.1	(3)	.2
55-64 years	.1	.2	.1	.2	(3)	(3)
65 years and over	(3)	.1	(3)	.1	(3)	(3)

[1] All data exclude persons in institutions.

[2] Persons on public emergency work projects are included with the unemployed prior to July 1943.

[3] Less than 50,000.

Increase in Placements of Older Workers

The publication by the U. S. Employment Service of statistics of placements of workers by age groups has been discontinued, but unpublished figures made available by the War Manpower Commission for the quarter, April–June 1942, indicate that the war has increased the job opportunities of older workers. In that quarter the placements of men and women combined in the 45–54 age group rose from 164,813 to 233,809, or 41.9 above those in the quarter, October–December 1941, while the placements of both sexes in the group 55 years of age and over increased from 73,317 to 117,735, or 60.6 percent. Comparing the same two quarters, the increase in placements in the higher age brackets was much more striking for men than for women—59.4 percent for men and 9.7 percent for women in the 45–54 age group. In the over-55 age group the rise in placements for men was 78.0 percent as compared to 15.2 for women. As the labor shortage became more acute the increases became more substantial.

Some details of this improvement in the situation of older workers which, seemingly, it required a world war to effect, are here reviewed. Data in brief are given on the war-time establishment of apprenticeship and other training facilities for elderly persons, and on the organization of two old-age counseling centers for the rehabilitation of individuals no longer young. Reference is also made to important implications for older workers in certain new branches of medicine.

According to a press release of June 28, 1943, by the War Manpower Commission, the Chairman of that agency announced on that date that—

> The steady rise in employment among older workers indicates that employers are losing their prejudice against this group and learning to value their experience and "steadiness." * * * The increased use of older workers is not restricted to industries and occupations which traditionally employed older people, but includes all vital war industries and essential civilian services.

He emphasized the necessity for further utilization of the older worker if the essential labor requirements were to be met.

Return of Old-Age Insurance Beneficiaries to Remunerative Employment

During 1942, the old-age and survivors insurance program was affected by two diverse influences: (1) The normal increase in retirements; and (2) the imperative demand for labor, which not only brought back retired persons and other beneficiaries into gainful occupations, but also kept in remunerative employment numerous other workers who in fact were eligible for retirement. The number in the latter group of course is not known; however, it is estimated that at the close of 1942 some 600,000 eligible workers had not claimed benefits. Furthermore, in November 1942, some 71,500 beneficiaries were not being paid benefits; in the great majority of cases, it was because they had current jobs covered by the Social Security Act.

At the close of the calendar year 1943, benefits were in suspension for approximately 114,000 beneficiaries because they, or the persons whose wage records constituted the basis of their benefits, were in covered employment. In addition, several hundred thousand wage earners eligible for retirement benefits had postponed submitting their claims and continued to work.

Diminishing Old-Age Assistance Rolls [2]

The 2,100,000 receiving old-age assistance under the Social Security program at the close of 1943 represented a reduction of 80,500 persons, or 3.6 percent from the number of recipients in December of the previous year. Any decline in this particular dependent group is of considerable interest, as the number of individuals in the population 65 years of age or over increases by approximately 200,000 per annum. Under the economic conditions preceding the war, it was estimated, the old-age assistance rolls would have been augmented by almost 50,000 persons per annum.

In each successive month of 1943 fewer persons, in the country as a whole and in more than one-third of the States, received old-age assistance. During the last half of 1943, assistance was discontinued for approximately 18,000 because of the employment of the recipients or their spouses. This number does not include cases in the State of New York, for which these data are not available.

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[2] The first 3 paragraphs are based on a manuscript for the "Public Assistance" section in the forthcoming Social Security Yearbook, 1943.

The wartime increase in employment opportunities for aged persons has reduced the number who would otherwise have applied for assistance, especially those just reaching age 65, more substantially than the number leaving the rolls.

On May 29, 1944, the Pennsylvania Department of Public Assistance reported that during the preceding year private industry had taken more than 2,000 persons over 65 years of age from the old-age assistance rolls of that State. Moreover, only a small number of this group had been obliged to reapply for help. Among those securing employment was an 82-year-old man who made such a good record in picking up and delivering light packages that his employers asked the Public Assistance Department to obtain another old-age assistance recipient for similar work. The 88-year-old man referred, in response to the request, was found "equally satisfactory."

A university graduate 72 years of age, who had always been a white-collar worker until misfortune brought him to public aid, left the assistance rolls and took a position as factory inspector, while a 69-year-old woman became a sales clerk in a large department store.

An analysis of cases closed in the State of New Jersey in February 1943 revealed that 11 percent of the closings resulted from the recipients' obtaining employment. One man, who had been in receipt of assistance for about a decade, was over 80 years of age but had found a job as machinist.

Discontinuance of CCC Activities for Veterans of Preceding Wars

The U. S. Civilian Conservation Corps, which is generally acknowledged to have been one of the conspicuously successful agencies created in the great depression, provided work not only for unemployed youth but also for veterans of preceding wars.

The total enrollment in the veteran contingent of the Corps from March 31, 1933, to June 30, 1942, approximated 225,000, which constituted about 10 percent of the total membership.

Twenty thousand veterans left the Corps the year preceding its dissolution. The number of applications received was substantially lower, which is attributed to the fact that "more remunerative employment opportunities elsewhere were available as a result of requirements for increased production and distribution of war essentials." [3]

Elimination of Maximum Age Limits for Civil Service Examinations

Even in 1940 and 1941, the demand for skilled workers led to the liberalization of age limits in many of the U. S. Civil Service examinations. On March 18, 1942, the Commission issued a circular (Departmental, No. 325) which read in part as follows:

> The attention of all departments and agencies is directed to Regulation II, Section 4, of the regulations promulgated under Executive Order 9063, authorizing the Commission to adopt necessary special procedures for the duration of the emergency.
>
> The section referred to provides in effect that there will be *no maximum* examination age limits except in those cases where the appointing officer establishes to the satisfaction of the Commission that the interests of good administration require such limits *for a particular examination.*

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[3] United States Civilian Conservation Corps. Annual Report of the Director for the Fiscal Year ended June 30, 1942, Washington, 1943.

Except under the conditions stated below, maximum age limits for *both departmental and field examinations* will accordingly be abolished in the following instances:

1. All pending continuously open examinations.
2. All pending examinations in which the original issue date and closing date are separated by a period of 5 weeks or more, and the closing date for which is not earlier than April 30, 1942.
3. All re-announcements of previous examinations.

It was also stated that any department or agency desiring to retain the existing maximum-age restrictions with regard to examinations which were pending, or to retain such restrictions established under previous examinations in the three above-listed categories, must submit in writing to the Commission the reasons for desiring such restrictions.

In all examinations announced for new positions subsequent to the effective date of the regulations referred to above, there will be no maximum age limits unless the appointing officer of the department or agency at the time of requesting the examination establishes, to the satisfaction of the Commission or its representatives, that the interests of good administration require a specific maximum age limit.

Table 2 contains a selected list of positions (with basic salaries) available in the Federal service as of May 16, 1944, the need for personnel for which was declared urgent and for which examinations were open to older persons.

TABLE 2.—*Opportunities in Federal Civil Service, in 1944* [1]

Position	Basic annual salary [2]	Position	Basic annual salary [2]
Aeronautical:		Medical:	
Inspector, engineering materials	$1,620-2,600	Dental hygienist	$1,620
Maintenance supervisor	3,200 3,500	Medical officer	3,200-4,600
Agricultural: Warehouse manager	2,000-4,600	Occupational therapy aide	1,620-2,000
Clerical and office machine:		Physiotherapy aide	1,620 1,800
Calculating-machine operator	1,440	Veterinarian	2,000 2,600
Alphabetic-card-punch operator	1,260	Nursing:	
Photostat operator	1,440	Graduate nurse in United States	1,800
Mimeograph operator	1,260	Public Health nursing consultant	2,600-5,600
Teletype operator	1,440 1,620	Miscellaneous:	
Economics and business:		Laboratory mechanic	1,440-2,300
Accountant and auditor	2,600-6,500	Lithographer	1,440-2,000
Economist and economic analyst	2,600-6.500	Radio: Radio inspector	2,000-2,600
Passenger rate clerk	2,300 2,600	Scientific:	
Statistician	2,600-6,500	Chemist	2,600-5,600
Traffic and transportation specialist	2,600-6,500	Meteorologist	2,600-5,600
Engineering:		Physicist	2,600-5.600
Draftsman, engineering	1,440-2,600	Technical and scientific aid	1,620-2,600
Engineer (aeronautical, chemical, electrical, explosives, industrial, marine, and other fields)	2,600-8,000	Trades:	
Engineering aid	1,440-2,600	Instrument maker	(3)
Expediter (marine)	2,600-3,800	Toolmaker	(4)
Naval architect	2,600-5,600		

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[1] Data are from U. S. Civil Service Commission. Form 2279, Issue No. 4, Opportunities in Federal Service, and Supplement No. 1 to the foregoing.

[2] Exclusive of overtime compensation for the present 48-hour Federal workweek, which amounts on annual basis to approximately 21 percent of that part of the basic salary not in excess of $2,900 a year.

[3] Pay ranges from $7.44 per day to $1.24 per hour.

[4] Pay ranges from $7.20 per day to $1.08 per hour.

Reemployment of Federal Civil Service Annuitants

The U. S. Civil Service Retirement Division reported, under date of May 25, 1944, that annuitants reemployed before the attack on Pearl Harbor, December 7, 1941, numbered 689, and that since that date 789 additional retired employees have returned to the active, civil rolls of the Government. The first group was reemployed under Section 6 of the National Defense Act of June 28, 1940 (54 Stat. 676), authorizing the War and Navy Departments to reemploy persons who had been retired. The second group was brought back into Government work under Section 2 (b) of the Civil Service Retirement Act as amended January 24, 1942, providing that "an officer or employee retired under the age or optional provision of the law may be reemployed only in the event the appointing authority determines that he is possessed of special qualifications." On April 30, 1944, the number of these former annuitants engaged in the war effort was 1,017. The great majority of them were reemployed in the War and Navy Departments, generally as mechanics or skilled workers. The Commission has compiled no detailed data as to their ages, jobs, and salary.

Information as to the number of employees retained in the Federal Civil Service, under the pressure of war, beyond the age at which they would have been mandatorily retired, is not available at the Commission, as Federal departments are not required to report to the Commission the immediate reemployment of employees attaining the obligatory retirement age.

Older Groups in the Armed Forces

In May 1944, the Navy Department reported that 2,300 officers who had become eligible for retirement since the attack on Pearl Harbor were on active duty.

As of April 3, 1944, the number of Army officers on the retired list for all causes including age was 4,525, of whom 630 were on active duty.

Table 3, supplied by the Adjutant General's Office, shows that on December 31, 1943, the age groups 40 years and over contained 75,200 (11.6 percent) of the male Army officers, 78,500 (1.2 percent) of the enlisted males, 1,200 (16.2 percent of the women officers, exclusive of the Army Nurse Corps and 42 women doctors), and 52,000 (7.9 percent) of the enlisted women. Of these older groups, 16,700 male officers and 6,800 enlisted men were 50 years of age or over.

TABLE 3.—*Army Personnel, Male and Female, as of December 31, 1943, by Age*

Age	Males[1]		Females	
	Officers[2]	Enlisted men	Officers[3]	Enlisted
All ages	649,000	6,739,000	7,400	52,000
18 years	--------	273,500	--------	--------
19 years	1,900	513,500	--------	--------
20 years	6,600	561,000	--------	1,200
21 years	16,500	607,700	100	4,000
22 years	36,900	607,900	500	7,900
23 years	47,400	535,300	400	6,100
24 years	56,300	517,500	300	4,700
25 years	59,900	467,400	600	4,200
26 years	53,300	344,600	500	4,000
27 years	43,600	329,500	300	1,700
28 years	39,000	291,700	600	2,100
29 years	32,300	263,400	300	1,800
30 years	25,400	225,900	400	1,900
31 years	23,400	204,400	300	1,200
32 years	21,900	175,600	300	1,500
33 years	20,100	161,600	300	700
34 years	18,500	144,000	200	1,200
35 years	17,400	132,400	300	700
36 years	16,200	115,900	400	1,100
37 years	14,700	102,400	200	700
38 years	12,700	67,300	200	700
39 years	9,800	18,000	--------	500
40 years	9,000	12,400	100	700
41 years	7,900	12,900	200	800
42 years	6,600	10,000	200	600
43 years	6,900	11,500	200	300
44 years	5,700	7,300	100	700
45 years	5,500	7,800	100	400
46 years	4,800	5,500	--------	--------
47 years	4,100	1,200	100	200
48 years	4,200	1,800	100	100
49 years	3,800	1,300	--------	200
50 years	3,000	1,400	100	100
51 years	2,800	1,400	--------	--------
52 years	2,200	400	--------	--------
53 years	1,900	800	--------	--------
54 years	1,500	400	--------	--------
55 years	1,400	500	--------	--------
56 years	1,000	400	--------	--------
57 years	800	500	--------	--------
58 years	500	200	--------	--------
59 years	600	100	--------	--------
60 years	300	--------	--------	--------
61 years	200	400	--------	--------
62 years	100	200	--------	--------
63 years	100	100	--------	--------
64 years	200	--------	--------	--------
65 years and over	100	--------	--------	--------

[1] Includes warrant officers and flight officers.

[2] Ages of officers based on 90 percent sample; those of enlisted men, on Personnel Survey.

[3] Excludes Army Nurse Corps (ages of nurses not available) and 42 women doctors.

Decline in Number of "Forty-Plus" Clubs

In the spring of 1939 the United States was still confronted by a receding but serious unemployment problem. Organizations known as "Forty-Plus" clubs were operating in various parts of the country. A partial list of these clubs published in the Monthly Labor Review included associations in 29 cities in the United States and 2 cities in Canada, and 1 club in London.

These clubs had been created in behalf of higher-salaried men and women over 40 years of age who were without jobs. The purpose of such organizations was to restore highly capable unemployed persons to business and industry. In many cases, the joblessness of these people had affected their morale. It was, therefore, a common practice of the club members to "sell" each other rather than themselves to prospective employers.

Roland R. Darling (now director of the Veterans Reception Center of the Greater Boston's Community Council), who was very active in the Forty-Plus movement, stated in a letter of May 8, 1944, to the U. S. Bureau of Labor Statistics, that the majority of Forty-Plus clubs had ceased to function during 1942 or 1943, but that the "alumni"—the men placed in jobs—had retained their interest in the plan and are holding it ready for operation when the service is needed again. In Boston, for example, the alumni hold a monthly meeting.

Mr. Darling also reported on "some interesting reactions" of employers who hired men from Forty-Plus. One employment manager of an important company said that "after the war those men over 40 will be with me. We have not had any trouble from them.

They have good work habits and there was little or no absenteeism among them. Our plan is to keep them as long as we can. They have proven their worth." Another executive stated that the older men in his company were not so addicted as the younger workers to late hours, when not on the job, and that in general their production was very satisfactory. He also stressed that these more mature employees had good habits of work and did not take advantage of others.

A third employer held that young persons after the war will be obliged to make drastic adjustments when high wages will no longer be paid for jobs demanding few, if any, skills. Older workers have skills and good habits of work. Although they may not learn a new skill as rapidly as young persons, they are quicker to adapt to salary readjustments and to accept the reasons for them.

According to Mr. Darling it "is evident that these older men who have experienced unemployment know that no position is secure and that a person must establish relationships with the employer which will assure perfect understanding" in order to avoid dismissal on short notice. He added: "Of course, in line with the original policy, the local Forty-Plus organization will be set up by men who are over 40 and who are unemployed. None of us who have jobs will dictate policies but we will provide the new group with information regarding previous activities."

At least 16 Forty-Plus clubs are still in operation, according to a letter of May 4, 1944, to the U. S. Bureau of Labor Statistics from Henry Simler, chairman of the Forty-Plus Committee of the National Federation of Sales Executives. Among the cities in which these clubs are functioning are Buffalo, Chicago, Cincinnati, Cleveland, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, St. Paul, and San Francisco.

In certain cities the clubs have active alumni who have been placed through their respective organizations, and the dues paid by such alumni are helping the regular or active clubs in a financial way. The active clubs require no fees nor dues from members seeking positions. Mr Simler's letter, like that of Mr. Darling, indicates the opinion of the alumni of Forty-Plus clubs that there will be great need for these organizations in the post-victory period.

From time to time, in spite of the numerous war-job opportunities, the New York City Forty-Plus Club runs advertisements concerning able men who are in quest of positions and sends out bulletins listing high-caliber older men available for employment. A monthly bulletin is issued jointly by the Men Over Forty Club of Chicago and the alumni association of that organization.

In a broadcast from Chicago on March 10, 1944, Dr. Preston Bradley said in part:

> Five years ago when the Men Over Forty Club organized here in Chicago, I did all I could for that fine organization.
>
> The club has been going all these years and performing the most remarkable services of any I know. During the early years, the difficulty was getting positions for its members, and now there is a complete reversal—now more positions than members—so Mr. Louis H. Lange, the president, asked me if I would help to bring to your attention that there are some very fine responsible positions open to men over 40 who can qualify.

Older Women Workers

The greater number of placements of older women workers in the April–June quarter of 1942, as compared with the October–December 1941 quarter, has already been noted. As the labor market tightened, the possibilities of the contribution older women could make in the labor field were more widely recognized.

In mid-August of 1943 the Women's Advisory Committee of the War Manpower Commission stressed the tremendous importance of the immediate and rapid development of an "aggressive program" to promote the greater utilization of older women in war activities. The committee's chairman asserted that full utilization was not being made of the older-worker supply, except in a very few areas suffering the most acute labor shortages, and stated that the problem was "especially serious with respect to older women, against whom employment restrictions are much more severe than in the case of older men."

War Manpower Commission reports considered by the Women's Advisory Committee show some increase in the opportunities for employment of older women under current conditions. Not only have older women been accepted in trade and service to replace men and younger women attracted to better-paying jobs, but in many labor-shortage areas women of 50, 60, and in some cases even 70 years of age, are operating machines, working as bench hands, assembling, inspecting, and performing other similar jobs.

These same reports, however, also show that while the situation with respect to acceptance of older women has improved, the improvement has proceeded slowly when compared to the progress made by older men. In many areas, the traditional upper age limits have been raised for men, but not for women. In all cases where the relaxations have applied to both men and women, the gains have been greater for men than for women.[4]

The following selected reports (as of late 1942 and 1943), made by employers concerning older women workers, were compiled by the Women's Bureau of the U. S. Department of Labor.

A bag-loading plant in a Southern State has a policy of hiring older men and women. The plant manager said if he had a choice he would hire no woman under 35.

A plant making marine engines on the West Coast stated, "Most of the women employees are middle-aged. Preference is given to those with dependents.'

An aircraft plant in the Middle West has hired many older men and women. Some women past 50 were doing good work.

A company in New Jersey making rubber products likes to hire "middle-aged women because they are not as interested in job-shopping" as the younger ones. (Less turnover.)

Another New Jersey factory, nauufacturing marine lights, deliberately chose women 30–40 years old for its first women employees, intending to choose the best for supervisors of expanded force of women later. They have been very satisfactory—no absenteeism, better record than men on that.

A Federal Reserve Bank employs older women in the War Bonds Division. They make up in accuracy what they lack in speed. There are 12 women 35–50 years old and they are stable—no turnover and no trouble with absenteeism or tardiness.

One railroad office in Kansas City prefers mature women because younger ones are not responsible.

A wholesale distribution firm in St. Louis prefers mature women and is using middle-aged ones—many former domestic servants—in the packing room of the warehouse and finds them more careful than youngsters.

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[4] Office of War Information. War Manpower Commission. Advance release PM4430, Washington, August 1943.

In a hosiery factory, a group of women, 50, 65 and 70 years of age, are inspecting. Women 50 to 60 are considered satisfactory, but the company would rather not have women much over 60.

Comments made by employers in various industries to field representatives of the same Bureau indicate some of the shortcomings of older women workers. Thus, in aircraft-assembly work older women are reported as not being very satisfactory in the machine shop. A fireworks and pyrotechnics company preferred young girls in the match plant because the jobs require speed in packing, but a foreman in the signal-flare division, where speed was not important, said that he preferred older women because they were "reliable in every way." An electrical products company preferred young women for winding and for jobs requiring finger dexterity and long training.

The Manpower Review of April 1944 reported on a recent appeal by the WMC Women's Advisory Committee for the assistance of women's organizations in securing additional women required for war activities. According to an estimate made by the Commission, the record total by July 1944 should be 18,700,000 women workers, the revised estimates of the number employed at the same date in 1943 being 18,080,000. Women's clubs have been asked to match their efforts with the employment needs and policies of the WMC districts and to work out their campaigns in collaboration with the local office of the Employment Service, which is in a position to know the labor-market situation in its particular area.

Training Older Workers

APPRENTICESHIP

Realizing that the great majority of apprentices as well as the younger all-round skilled men, regardless of the importance of their skills, would be drafted for the armed forces before the termination of the war, the Federal Committee on Apprenticeship (the Apprenticeship Training Service management-labor policy committee) recommended that where there is a need for all-round skilled work at the earliest possible moment, apprentices should be taken from the working groups least likely to be affected by the draft. Such groups are composed of honorably discharged veterans, older workers with family responsibilities, men classified as IV–F, handicapped people, and women (for some trades).

It had been claimed that older men would object to being called "apprentices," also that these "oldsters" could not be expected to subsist on apprentice wages. However, many older employees have been found who, having had some experience in a trade, are glad to receive additional training which qualifies them as all-round skilled workers. Furthermore, their performance in the training process is just about as good as that of the younger apprentices. It was also found that the question of wages is not difficult at all "because the older worker is transferred to an apprenticeship status without loss of pay and is granted credit for past experience, thus entitling him to one or more pay raises even before he completes his apprenticeship."[5]

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[5] War Manpower Review (Washington), April 4, 1944.

AVAILABLE UNIVERSITY COURSES

Among the three groups of applicants under the Engineering Science and Management War Training Program for employment in critical fields are more mature persons who have professional or kindred experience but who are now unemployed or engaged in less-essential industries. For example, construction engineers are retrained for mechanical, electrical, and aeronautical engineering; managers in nonessential lines of activity are given preparation for managerial positions in war work.

The University of Chicago, Stanford University, Harvard University, the University of Pennsylvania, and the Illinois Institute of Technology, among others, have been highly successful in "refurbishing the talents of displaced executives." Typical members of a class for retraining are married men more than 40 years of age having 1 or 2 children. For the most part these men are college graduates. After they have completed approximately 500 hours of class and laboratory work in up-to-date war production techniques, salesmen have been able to serve as production expeditors, investment managers have made good as job-evaluation technicians, and bank tellers have become effective purchasing agents.

Old Age Counseling Centers

The fact that at least two old-age counseling centers have been established even during the war should be a stimulus to older persons having or desiring jobs not only because of the encouraging possibilities of these agencies in the existing crisis but also because their dynamic methods would seem to make for greater post-war job security for clients of such centers.

The two new clinics, one in Los Angeles and the other in New York, are based upon the experience of the successful old-age counseling center in San Francisco started in 1921 by the late Dr. Lillien J. Martin. Her efforts in this field arose from her belief that "our second half century like our first should be both happy and useful, devoted to active living and growing." She constantly stressed the social significance of salvaging the old. In its 15 years of operation the San Francisco center has had 2,874 clients who have taken advantage of the full salvaging method. Many persons, however, came only once or twice for the solution of a particular problem. Each case received special treatment. At the time of Dr. Martin's death she was planning the organization of old-age counseling centers in various cities. The work in San Francisco will be continued by her associate.

Older Aliens

Older persons constituted a heavy proportion of the 3,600,000 aliens in the population of the United States on March 1, 1944, the median age of this foreign group being 51.7 as compared to 29.5[a] for the population as a whole. A sample study made March 4, 1944, of approximately 500,000 alien registrations, indicated that 28.2 percent (1,015,200) of these foreigners are 60 years of age or over and that 26.5 percent (954,000) are in the 50–59 age group.

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[a] Estimated; in 1940 the median age was 29.0.

The following table suggests the presence of a very substantial number of older alien workers who probably have had more difficulty in securing jobs than native white and naturalized citizens in the same higher age brackets.

Table 4.—*Aliens in the United States, March 1, 1944, Classified by Age and Country of Citizenship*

[Source: U. S. Immigration and Naturalization Service, Monthly Review, May 1944]

Country of citizenship	All ages	60 and over	50–59	Under 50
All countries	3,600,000	1,015,200	954,000	1,630,800
Austria	127,100	40.600	43,900	42,600
Germany	227,200	55,900	40,100	131,200
Great Britain and Canada	438,400	124,900	86,800	226.700
Hungary	81,000	29,400	25,700	25,900
Irish Free State	67,000	23,300	10,500	33,200
Italy	587,500	199.000	168.900	219,600
Mexico	420.100	67,000	76,300	276,800
Poland	330.100	99,500	130,700	99,900
Russia	259,600	95,400	86,800	77,400
All others	1,062,000	280,200	284,300	497,500

WMC Policy Regarding Older Workers

In May 1943, over a third of the total number of persons employed were 45 years of age and over, the Chairman of the War Manpower Commission announced in a press release of June 28 of that year. At the same time he urged, as a basis for the full utilization of the older manpower supply, that—

1. Jobs be filled on the basis of individual ability to perform, regardless of age, and that, therefore, maximum hiring age limits which bar many qualified workers be eliminated.
2. Older women be given equal consideration with men for employment, on the basis of individual ability to perform the job.
3. No worker be automatically retired or dismissed on reaching a specified age, without regard to continuing usefulness either at his regular job or at a less exacting one if necessary.
4. Older workers who are eligible for retirement benefits be encouraged to remain at their jobs wherever possible.
5. Older workers be actively recruited in areas of labor shortage along with all other labor resources; provided, however, that employment opportunities for older workers are known to exist.
6. Qualified older persons who are available for employment be absorbed before recourse is had to unnecessary immigration or to less readily available labor resources.
7. Older persons not available for full-time work be used wherever possible for part-time work, where the acuteness of labor shortage warrants use of part-time workers.
8. Maximum age limits for acceptance in war training courses be eliminated in favor of realistic appraisal of the capacities of the individual applicant, wherever placement opportunities exist.
9. Arbitrary upper age limits be eliminated in determining eligibility for public vocational rehabilitation services.
10. Equal wage rates be paid for equal work regardless of age.
11. Special consideration be given by employers to the health and safety of older workers whose physical condition may require extra safeguards.

The War Manpower Review of June 1943 reports that the main determining fact in the older workers' job success is proper placement. Many highly skilled workers too old to keep up the speed of the production line can be used to great advantage as instructors, supervisors, or inspectors, because they have the well-rounded knowledge and experience that younger workers could not have acquired. Older workers without experience have also been found satisfactory for less-skilled jobs.

Actual experience of employers with older men and women workers has indicated that even in cases where their production per time unit has been relatively less than that of young persons, the experience, judgment, concentration, carefulness, and patience of the older wage earners are compensatory factors "which pay dividends in quality of product, salvage from waste and rejects, and often in long-run output."[6]

The Ageing Process

Examination of recent literature concerning older workers discloses that the conservation, development, and utilization of their abilities is strongly stressed. The emphasis is due in part to the serious need for labor in the war emergency, yet this realization of the value of elderly persons as members of the working force undoubtedly has its implications for post-war reconstruction. Certain conclusions and recommendations of authorities on the subject of this article are noted below:

The insistence, in scientific discussions on old-age problems, that chronological age is not an index to physical age or degree of deterioration is so frequent that it will not be referred to in individual statements which offer reiterative evidence on other matters such as the actual and potential value of older persons in the working world, the advantages of their holding jobs, and the advisability of the continuous development of their abilities. By way of preface to these viewpoints, attention is called to the fact recently brought out by the Assistant Professor of Industrial Research in the Harvard Graduate School of Business Administration[7] that the principal sources of information on older workers are controlled physiological and psychological laboratory research; industrial statistical studies; and clinical observations, especially in industrial medicine. Most of the data derived therefrom are consequently regarded as "fairly trustworthy."

Dr. Alexis Carrel in his book, Man, the Unknown, stated: "The ageing man should neither stop working nor retire. Inaction further impoverishes the content of time. Leisure is even more dangerous for the old than for the young. To those whose forces are declining appropriate work should be given. But not rest."

In New Goals for Old Age,[8] Nolan D. C. Lewis, director of the New York State Psychiatric Institute and Hospital, pointed out that "The senile wants a job, wants to be important, wants affection and lots of it, and when he is denied importance, affection, and understanding he becomes a problem." The editor of this symposium holds that, for the great majority of older persons, a job is not only desirable but necessary, provided, of course, that "they are interested in working and physically and temperamentally able to cope with some type of employment." He is of the opinion that expectation of a loss in efficiency accelerates its arrival. He believes that an industry or profession should retire people not on a particular date but over a protracted period, by a "stepping down and retraining process" through the medium of a job-reallocation bureau functioning within the industry or profession itself.[9] He visualizes the possibility of the establishment in every community of a school for older people, adapted to the special requirements of men and women of 60 and even to those in the 80's, "with a vocational counselor doing a tailor-made guidance job." Youth and age should not be pitted against each other. "Cooperation rather than competition will bring out the best in each age grouping." [9]

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[6] War Manpower Commission, Press release (Washington), August 13, 1943.

[7] The Older Worker in Industry, by Ross A. McFarland. (In Harvard Business Review, Boston, Summer number, 1943, pp. 505-520.)

[8] New Goals for Old Age. Edited by George Lawton. New York, Columbia University Press, 1943.

Lawrence K. Frank, a writer on sociological and psychological subjects, formerly vice president of the Josiah Macy, Jr., Foundation, states: "We cannot do a great deal for the older person without at the same time doing a great deal for society." [8] In an ideal society, according to Dr. Abram Kardiner (Psychological Factors in Old Age), the activities of the aged would never be abruptly cut off but would be shifted in accordance with their changed capacities.

Dr. A. J. Carlson, Professor Emeritus of Physiology, University of Chicago, voices his attitude as follows:

> By keeping in idleness older workers who can still perform useful labor we are not only wasting valuable human resources but we are contributing to biologic parasitism in and degeneration of human society. For man is no exception to the biological law that existence without effort, without struggle impairs the species.[10]

It is the conviction of Dr. E. V. Cowdry, "that the problem of ageing will never receive the attention it deserves until the best informed among the millions rapidly ageing themselves see to it that darkness is dispelled by research.[11]

In an address before the Industrial Hygiene Foundation of America, Inc., 1943, Dr. Edward J. Stieglitz,[12] maintained that the war and the changing population structure make it imperative at present and in the coming years for industry to utilize older persons. He conceded that senescence undoubtedly appreciably affects industrial efficiency, but not always in the way of a decline. In the ageing process certain capacities may be developed. It is possible for older men to acquire numerous skills and to be active in various spheres of usefulness. To ignore these potentialities because of somewhat reduced capacity is gross and dangerous extravagance.

> The immense loss in industrial efficiency due to relative impairments of health, insufficient to cause absence from work but sufficient to greatly reduce work effectiveness, has been almost wholly neglected thus far. Prevention of much of this loss is possible by the application of individualized constructive medicine. Purely wholesale measures designed to better the work environment alone cannot suffice.

In closing, Dr. Stieglitz suggested that the Industrial Hygiene Foundation of America form a committee or council to make a deeper study of the problems under discussion with a view to making specific proposals.

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[8] New Goals for Old Age. Edited by George Lawton. New York, Columbia University Press, 1943.

[9] Mental Decline and its Retardation, by George Lawton. (In Scientific Monthly, New York, April 1944, p. 316.)

[10] Scientific Monthly (New York), July 1943.

[11] The New Public Health. (In Scientific Monthly, New York, October 1942, p. 360.)

[12] Author of Geriatric Medicine (Philadelphia, 1943) and various other treatises on the problems of ageing.

The Outlook for Older Workers

Most of the students of post-war planning agree that the averting of serious unemployment in the coming peace is a priority problem. The older workers' stake in this matter is of signal importance not only to them but for the national economy.

The evidence in the preceding sections of this article emphasizes the economic value of the work of a large proportion of persons in the higher age brackets, but the experience of many in this population group during the depression years is unforgettable. It is to be hoped that wartime progress in administrative techniques, the advance in the art of industrial management, and the rising interest of social workers, economists, sociologists, psychologists, and physicians in questions confronting the older worker will combine to brighten his future fortunes.

Of promise is the recent development of geriatrics (the medical care of older people), gerontology (the study of the ageing process), and gerontotherapy (the direct treatment of the ageing process), which foreshadows a new type of public health, described by Dr. E. V. Cowdry as "a union of what is best in medicine and sociology."[13] The more extensive salvaging of older workers would seem to call for no greater miracles of science than those already of record in other fields.

Among the concrete indications of a more satisfactory tomorrow for men and women no longer young are the existence of a Unit on Gerontology in the National Institute of Health and the survey being undertaken by the trustees of the Nuffield Foundation in Great Britain of the individual, social, and medical problems of ageing.[14]

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[13] The New Public Health. (In Scientific Monthly, New York, 1942, p. 356.)

[14] Journal of the American Medical Association (Chicago), April 8, 1944, p. 1075.

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A. F. Hinrichs, ***Acting Commissioner***

DEMOBILIZATION OF MANPOWER, 1918–19

Part 2.—Early Phases of Demobilization

From the MONTHLY LABOR REVIEW
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United States Department of Labor
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Demobilization of Manpower, 1918–19

Part 2.—Early Phases of Demobilization [1]

THE national income in 1918 was larger than in any pre-war year. About one-fourth of it went toward the expenses of running the war, but more people had been employed at higher wages than ever before. There was little advance in the incomes of salaried workers in the middle and lower income groups and their standard of living had declined as prices rose and war taxes increased, but wage earners, both skilled and unskilled, had after a lag benefited materially from steadily increasing wage levels and full employment. Wage advances resulted from the great demand for workers in the war production areas and from a desire to allow nothing to interfere with the steady output of war goods. These wages were further enhanced by additional pay for overtime work.

Aside from savings represented by war savings stamps and Liberty bonds, few of the workers in the low-income groups had made any provision against the time when abnormal wage payments would cease. Many of them had known thrift as a necessity but they had not acquired the saving habits that might have encouraged them to save from their high wartime wages. Furthermore, there was no effort to encourage the workers to save against a day of need, and neither industry nor government had assisted in the accumulation of an emergency fund.

The war-making agencies proceeded upon the assumption that the war might last until 1922. Plans had been completed for accelerating the war effort. Hundreds of thousands of men anticipated an early call to the armed forces. Thousands of additional Government contracts had been negotiated. Industries were preparing for more complete conversion to production of war products. The U. S. Employment Service was expanding and making more effective its work of providing the adequate number of workers for the scattered war plants. Government controls over industry and over civilians were to be tightened. The War Labor Administration was busy with wage adjustments and settlement of labor difficulties.

This concentration upon the war effort had official approval, and there was no encouragement of discussion of the problems to be faced when the war was over. However, readjustment problems engaged the minds of various groups in Government circles and in industry during the 6 months preceding the Armistice.

Civilian Proposals for Post-War Readjustments

There was full agreement that there could be no return to pre-war levels of production, employment, and wages, and there was no doubt as to the industrial future beyond the months of so-called reconversion. Judgments differed, however, as to the magnitude and precise character of the post-war problems and the time span required for the swing away from production for war, through the inevitable temporary but acute period of low productivity, unemployment, uncertainty, and unrest to the upswing of full production for peacetime requirements. Only a few realized the dangers inherent in short-range planning when industries began to compete for markets serving a public with relatively high and widely distributed purchasing power. It was the immediate and transitory post-war period which provided the basis for most of the pre-Armistice considerations. There is great similarity between these proposals of 1918 and the current "post-war planning" which has received official commendation during this war.

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[1] Part 1 of this study appeared in the March 1944 issue of the Monthly Labor Review (p. 500). Other sections will appear later.

The various proponents of a plan of action discussed different angles of the readjustment problem but there was complete unity on one point—the urgent need for an announced Federal policy supported by constructive legislation and sufficient funds to meet emergencies as they arose. It was generally conceded that the task of developing a flexible program for the employment of men and machinery, during the interim while the Government canceled war orders and industry equipped itself for peacetime production, should be undertaken by an authoritative governmental agency, nonpartisan in character and entirely free from the pressure of wartime considerations. Without governmental action at both the Federal and State level the cost to the Nation resulting from serious interruption to production and the accompanying unemployment would be greater than the outlay for a well-conducted program for "buffer" employment.

The secretary of the Council of National Defense made the following general observations in August:

> It is elementary that after the war America will not be the same America. * * * New conditions and relationships create new problems for nations as well as for individuals * * *; the change will be as great in the thought and ideals of the Nation as it will be in its strictly material problems, whether these be military, commercial, or those having to do with labor. (National Archives. War Department, Files of Council of National Defense.)

Economists of the War Labor Administration, who argued for the creation of an official agency to act during the readjustment period said: "Already groups with pecuniary interests at stake are busied in studying the situation with a view of turning it to their own advantage." They contended that, lacking governmental action, there would be compromise between the strongest of these interested groups, with little or no consideration of important but obscure interests. "Unity of effort cannot be superimposed. * * * If a consistent plan is to come, it must be because those who are responsible for it are animated by a common desire, a common viewpoint, and a common willingness to merge their contributions into a common whole." [2]

With this point of view the board of directors of the United States Chamber of Commerce was in agreement. It urged upon the President Federal recognition of the problem, in order that all class interests should be subordinated to the interests of the country as a whole.

The general acceptance of this proposal led many executives in the emergency war agencies to assume that certain governmental controls and restrictions would be retained during the period of cancellation of war contracts and retooling for civilian production. The Secretary of the Capital Issues Committee, in a memorandum of November 9, made the following statement:

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[2] National Archives. War Labor Policies Board, Reconstruction Files.

> Industrial reconstruction after the war might be left to take its own course without governmental interference just as industrial preparation for war might have been left free but was not. The free operation of economic laws would result in wide price fluctuations, unemployment, and prolonged business depression. * * * There would seem to be no need therefore of any argument to show that the Government must assist wherever necessary by artificially stimulating and restraining natural economic forces. (National Archives. War Labor Policies Board, Reconstruction folder.)

Another businessman of the staff of the War Labor Policies Board believed that there would be sufficient demand for consumer goods "for a time at least," provided there was "a gradual reduction of war orders and carefully considered arrangement of selling prices for basic commodities. * * * In my judgment there is bound to be a period of confusion at the outset, considerable disorganization and uncertainty and at least temporary unemployment." He felt that commodity prices which had been at a high wartime level should be decreased, and that profits of the larger organizations had been such as to warrant price reductions without the lowering of wage rates.

> The method in which this hard piece of work is done will have a most vital effect on the success with which demobilization and the re-introduction of demobilized labor into industry is carried out. The social atmosphere is such that * * * the inevitable reduction of the dollar wage rate should follow and not precede, in a majority of industries, reasonable reductions in market prices. (National Archives. War Labor Policies Board, Memorandum from George W. Perkins to Felix Frankfurter, November 1918.)

There was, in addition to these broad approaches to the readjustment problem, considerable discussion as to the rate at which production of war goods should be discontinued. One group argued that the more gradual the rate of contract cancellation, the less critical would be the incidence of unemployment and the more readily could released workers be reemployed. The other contention was that it would be futile to attempt to postpone the drastic changes resulting from cessation of war orders; that the more promptly contracts were canceled the more quickly manufacturers could obtain access to raw materials, the speedier would be the reconversion of plants and therefore the shorter the period of unemployment.

There was, however, one grave defect in all of these discussions: They centered in Washington. There was no stimulation of post-war thinking at the local or community level. Although local groups had participated in wartime activities, it was not until after the Armistice that there was open discussion of reconstruction problems. With the Chief Executive engrossed first in winning the war and then in plans for the peace conference, and with little or no pressure upon members of Congress from their constituents, it is not surprising that the legislation which was proposed for enabling a smooth transition from war to peace died in committees with little or no public debate. Thus the country faced the post-Armistice period without help from its leaders.

The abrupt advent of the Armistice found the country unprepared for the reversal of this huge program. The Federal Government had become the largest employer in the country but it gave less consideration to the welfare of these workers, both industrial and clerical, than it would have expected from private industry. Neither the Government nor industry had provided machinery for readjustment to peacetime employment. Therefore, when the fighting stopped, the country was totally unprepared for the return to peacetime living. The War Department was not ready either for the discharge of the soldiers or for the discontinuance of its huge manufacturing program. The result was that the Armistice ushered in a period of uncertainty, of claims and counterclaims, and of unemployment and tension for tens of thousands of civilian workers.

War Department Program

The majority of all industrial workers were directly or indirectly employed by the War Department which had, during the war, encountered all phases of the labor problem. The selection, training, and movements of about 4,000,000 men in the armed services had also been the exclusive responsibility of the War Department. When the war ended, slightly more than half of these men were in France and about 1,600,000 eligible for immediate discharge were in training camps in this country. Therefore there was centered in the War Department both the authority and the responsibility for two of the major post-Armistice transactions affecting the lives of millions of American citizens—the demobilization of the Army and the cancellation of war contracts with the subsequent release of thousands of workers in war plants. This agency was not prepared for either task.

While it tardily made plans for the prompt discharge of the soldiers, it disavowed any responsibility for their welfare as private citizens. Later, however, it reversed this policy and cooperated in all efforts to obtain employment for those who needed assistance.

During the war the Department had supported the maintenance of such standards for war workers as would aid in the continued and prompt production of supplies for the Army. Conscientious efforts were made to improve living conditions for workers in all war industries. The Secretary of War himself had said, however, that the War Department had no other purpose than to see that the armies received adequate supplies when and where they needed them. This indicated little thought for post-war adjustments.

The method to be used in demobilizing the soldiers was announced soon after the Armistice, but formulation of policy had been so delayed that there was far too little time for selection and training of the administrative force required for the task. The work was hampered still further because camps in this country were widely scattered. What is more, all early plans had been directed primarily toward the handling of men from overseas. The first order for soldier discharge was ready within a week after the Armistice and called for the release of about 600,000 men, in camps in the United States, who could no longer be of service. Actual discharge moved slowly. During November 45,000 men were released, about 90 percent of them during the last week of the month.

During this period, the War Department was working upon a program of contract cancellation. It had been agreed that the policy should be developed in consultation with such other agencies as the War Industries Board and the Department of Labor. Each major cancellation was to be reviewed as to its effect upon the industry, the worker, and the geographical location of the plants. In order to have at hand dependable information on industrial conditions and opportunities for reemployment, the U. S. Employment Service made a weekly telegraphic survey to determine the location and amount of labor surpluses or shortages.

On November 12 the Secretary of War, Secretary of the Navy, and Chairman of the Shipping Board issued directions to discontinue immediately all Sunday and overtime work on Government construction and in Government owned or operated plants. This meant a sharp reduction, frequently as much as 50 percent, in the pay of the workers. This first step in the process of the workers' adjustment to peacetime conditions was bound to create unrest and uncertainty.

Most of the wartime gains of the workers had been long overdue. They were just and right. Now, the certain markets provided by war needs were fast disappearing. However optimistic the long-time industrial future of the country, the immediate future appeared clouded. If Government restrictions were lifted, prices and the cost of living were sure to rise. Surplus workers and released servicemen would compete for available jobs. The result would be industrial strife as workers fought to retain their recent gains. The months immediately following the close of the war were certain to be as abnormal as were the feverish months of preparation for war.

No legislation was available for this emergency. An Army officer said in 1921:

> Throughout the period of demobilization the legislative agencies left entirely to the War Department the solution of problems pertaining to the disbandment of our forces and disposition of surplus munitions. Even industrial demobilization was largely affected by military policy. (Lecture at Army War College on Demobilization of Men of the Emergency Army, 1921, p. 2.)

Fortunately for the employment situation, the rate of discharge of the soldiers was initially much slower than anticipated, owing in part to delay in preparation and in part to the lack of sufficient shipping space for returning the men from abroad. By December 1, the U. S. Employment Service had established offices in all camps east of the Mississippi River, to assist the men who were not returning to their old jobs to find employment. This work was hampered in more than one way. One difficulty was that the soldiers' qualification cards were based upon skills which they had when they entered the Army; many of them had received special training while in the service and were fitted for and desirous of obtaining work of a different character from that indicated on their cards.

During November there was a policy of gradual tapering off of war production and although workers and employers feared the worst, actually there was little distress. The announced value of cancellations was high but it included value of contracts on which work had not yet been begun; deliveries of finished goods, valued at about 2 billion dollars, were made in November. Manufacturers of goods suitable for civilian use continued their operations.

There was great pressure from Congress upon the War Department for economy and reduction of expenditures. The Secretary of War in a letter to the Chairman of the Senate Military Affairs Committee stated on November 18 that there had already been a saving of $700,000,000 through stop orders on contracts where work had not yet been begun; cancellation of contracts in process of execution had effected a saving of more than $400,000,000; and the stopping of overtime and Sunday work was saving about $2,900,000 a day. This pressure, coupled with advice from certain industry groups and an evident desire for change in procedure on the part of responsible officers of the War Department, resulted in a change of policy and abandonment of the centralized program for tapering off production.

Most of the November cancellations were for some percentage of the product rather than the whole, and many of them were for products where not more than 25 percent of the labor in the plants had been diverted to war work. The important items scheduled for early cancellation were confined chiefly to cotton and woolen goods, wood products and hardware, and automotive products. There had as yet been little cancellation of contracts for products where labor was 100 percent on war work.

Changes in War Department Policy

Events were shaping themselves into a pattern quite different from that indicated by the current public statements of Government officials. The judicial review of proposed cancellations delayed action beyond the wishes of the War Department. It had accepted the premise that continuance of war contracts required the use of raw materials better diverted to civilian use either here or abroad; that production of war materials with no peacetime value should be discontinued "as speedily as is consistent with the primary consideration of labor and the industries." There was, however, no governmental directive to implement these "primary considerations."

On November 27 an Advisory Board on Sales and Contract Termination was established by the War Department. Immediately there was an abrupt change in cancellation policy, and the War Department assumed full responsibility for cancellation. The intention was to accelerate cancellation greatly. The administrative functions were transferred to the District Offices of the Ordnance Branch, which would act upon orders from the supply bureaus. The U. S. Employment Service hoped that under the new procedures its regional and State directors would be able to obtain adequate information concerning the numbers and location of workers in the plants where production was to be discontinued. The earlier method had not yielded such information. The cancellation and curtailment schedules gave no indication of the way in which labor would be affected. Schedules relating to the same class of commodity frequently lacked any statement of labor conditions in the particular plant, the industry as a whole, or in the communities affected. Under the new plan the War Department, at the urgent request of the U. S. Employment Service, ordered its regional cancellation officers to consult with local representatives of the Employment Service "so that these matters of labor dislocation may be considered before the trouble is caused."

Speedy cancellation was now the order of the day; and it was comparatively easy to handle cancellation orders with expedition. However, the reconversion of plants and the reemployment of workers could not keep pace. During the first week in December thousands of curtailment and cancellation orders went out. Many of them included the phrase, "Incur no further expense." By December 9 these recent cancellations totaled more than 2 billion dollars. The geographical distribution of this slow-down in war production was approximately as follows:

	Percent
Middle Atlantic States	38
North Central States	27
New England	21
South Atlantic and South Central States	13
Western States	1

It must be remembered that the Government's shipbuilding program was not affected by these cancellations.

Beginning of Unemployment

The policy-making officers in the War Department seem to have been skeptical from the beginning concerning the seriousness of pending unemployment. The following statement, dated December 5, 1918, was made in a memorandum to the Chief of Staff:

> It is believed there is nothing to justify the prediction of hard times, industrial depression, lack of employment of large numbers of soldiers on account of the rate of discharge. * * * By the time immediate labor needs are satisfied, new construction will require the service of discharged soldiers. * * * The estimates that there may be considerable unemployment in the future are pure guesswork and there are many indications that there will be ample employment for all. It is believed the energy and resources of manufacturers and urgent need of the world for American raw materials and manufactured articles and the spirit of helpfulness displayed by the entire country will solve the question of unemployment for discharged soldiers and other war workers without any period of extended hard times or lack of employment. (National Archives. War Department, Files of the Chief of Staff—Demobilization.)

This note of optimism was reflected in most of the official statements of December, and even in the President's message to Congress. The Secretary of Labor, in a press conference as late as December 17, stated that thus far there was nothing in the weekly reports on industrial conditions "to indicate there is any difficulty in absorbing those who are being released from military forces and war emergency institutions."

It was the immediate problem of the transitional period which was the concern of those closest to the labor situation. With the cooperation of citizens and civilian organizations including the Red Cross, and men's and women's local clubs, the U. S. Employment Service proceeded to establish in communities throughout the country offices which would provide jobs for men returning from war and from the areas where there had been emergency war work. These offices were organized and managed by local committees. The U. S. Employment Service acted as a clearing house, keeping the records of jobs and of men, and directing the men sent to them by local bureaus.

In the meantime production under contract with the Government was being stopped so rapidly that the Employment Service, which had agreed to the decentralized control of the entire project of cancellation, complained to the War Department that its own explicit instructions to its district officers were being ignored in some areas. No advance notice of cancellations was being sent to the labor representatives, and in the Ohio area laborers were being released by hundreds. Private organizations in areas where this situation existed were protesting or making suggestions for easing off army orders.

One such suggestion was for converting orders for army shoes and clothing into manufacture for the civilian market, so far as materials on hand would permit. "Thousands of firms would thus be enabled not only to keep their present labor forces over the winter but would have a definite time in which to reconstruct their commercial organizations." In this case the records indicate some official concern, a courteous reply, but no action. In some instances, particularly in the manufacture of subsistence supplies, there was definitely a gradual transfer over from war orders to civilian production.

However, it was in the plants operating entirely on munitions and war materials that there was the greatest need for some program, sponsored jointly by Government and industry, for providing employment for idle workers.

By December 28, surpluses of labor were mounting daily in the cities where war industries were closing down. The immediate situation was most critical in Ohio and Michigan. The South was the only section of the country where there was an increasing demand for labor resulting in large part from the continued expansion in shipbuilding. Day by day the industrial situation grew more distressing. All munitions centers were affected. The area of surplus labor comprised in general the States of Massachusetts, Connecticut, New York, Ohio, Michigan, and Indiana. The number of workers out of employment was increasing in these areas.

Although the program for the demobilization of the soldiers was still in its formative stage, more than 600,000 men were released during December, of whom only 70,000 were men returned from overseas. About 30 percent of those released in December were demobilized in areas where workers were rapidly being released from war plants. There can be little doubt that the majority of these men returned promptly to their homes. They had not been subjected to experiences which alienated them from their environment, as had the men in the American Expeditionary Force.

It was the minority which drifted aimlessly about the big cities. Although these men were not representative of the whole they did constitute a restless, roving, group. Idle, and joined with unemployed and disaffected war workers, they formed a potentially dangerous element in the Nation's life. Wise, courageous, and sympathetic solution of their problems could not result from expedient decisions of the moment; it could come only from mature consideration of operating procedures worked out well ahead of their use, with subsidiary plans for meeting inevitable unforeseen emergencies.

Employment Situation in Various Industrial Areas

CONNECTICUT AREA

The Bridgeport, Conn., Local Board of Mediation and Cancellation, composed of representatives of employers and employees, appealed to the National War Labor Board on December 18 for some modification of cancellations to correct the rapid release of workers, and to "assure a graduated decrease in the number of munitions workers employed in Bridgeport." Connecticut was a crucial area for war production, and the abrupt cancellation of the ordnance program therefore created alarm in all business and labor groups. Great quantities of small arms and ammunition had been produced in this area which already had plants producing such materials when the United States went into the war.

The Connecticut post-Armistice situation had been a matter of continual concern. The Chief of the Small Arms and Ammunition Section of the War Industries Board had submitted a memorandum on November 23 to the Director of Purchase, Storage and Traffic, the controlling cancellation agency of the War Department, in which he carefully enumerated the problems of certain localities upon cessation of war work, including the Connecticut area. He urged cooperation between the regional representatives of the Army and the industries, with a view to reducing the rate of deliveries and thus maintaining employment while contractors returned to "normal industry." The War Department felt that industry should itself take some initiative, since it was plain that war production must cease.

There is every evidence that the contractors in the Connecticut areas had been given the option to taper production gradually from January 1, 1919, to May 1, 1919, giving ample opportunity for gradual release of workers. The appeal from the Connecticut Board of Mediation and Cancellation was immediately followed by a long and urgent telegram to the Secretary of War from the Governor of Connecticut stating that—

> War-contract suspensions are proceeding in Connecticut in an unreasonable manner and at an alarming rate which jeopardizes our whole industrial organization affecting labor and capital alike. * * * Council of Defense and Employment Service unite in recommending first that recent large cancellations * * * be revoked for further consideration; second, that the curtailment program be modified to extend over a longer period; third, in the case of important contracts, manufacturers and Employment Service be given reasonable notice of proposed suspensions to determine effect and make readjustment; fourth, that materials under suspensions be released for commercial work and that future curtailments be made after due consideration of possible effect.

The day following the release of this telegram the Clearance Officer of the U. S. Employment Service made a separate presentation to the War Department in which he stated that the Federal Employment Director for Connecticut reported that: "Accumulated cancellations and suspensions, concerning which the Employment Service had no advance notification, have thrown out of employment more than 4,000 persons in New Haven." Further evidence of the lack of real cooperation between representatives of the War Department and those of the Employment Service during this period is contained in the following paragraph of this memorandum:

> It was the understanding that the Employment Service would be kept immediately in touch with cancellations or curtailment. It was also the understanding that cancellations or curtailment would be made with consideration of cancellations and curtailment already made in that district. This intent clearly is not carried out if a large number of cancellations involving the release of a great number of laborers are issued from the District Office at one time and without notification to the Employment Service. (National Archives. War Department, Purchase, Storage and Traffic File 164—Labor; from Sanford Freund to Assistant Director, Dec. 20, 1918.)

These protests from various sources were passed along to cancellation officials in the War Department. One result was a memorandum from the Chief of the Procurement Division, who admitted that there were no statistics as to the number employed on war work in Bridgeport, and no information concerning the number who would be thrown out of work through suspension of contracts. He stated that the Ordnance Department was kept advised of labor conditions throughout the country and considered as carefully as possible the effect of suspensions upon employment. He then said:

> It has been forcibly suggested to the Department by Members of Congress and Senators, that a good deal of the agitation in favor of continuing contracts on account of the labor situation was clever propaganda on the part of the contractors who wish to continue to manufacture materials which the Government does not need, simply for profit, and considerable pressure has been exerted to force the suspension of contracts as rapidly as possible.

It was his judgment that it "would have been greatly to the advantage of the Government if it had been possible to stop the work immediately and to pay off the men, giving them 30 or 60 days' extra wages * * * for in this way the Government would have lost only the cost of labor and would have saved vast quantities of good material." He drew attention to the abnormally increased population of Bridgeport, and stated that many of the workers would have to leave the congested area and in many cases have to accept lower wages.[3]

A few days later, the Assistant Secretary of War (the Director of Munitions) wrote to General Goethals, the ranking cancellation officer, urging that his office support the district offices in ascertaining the degree to which manufacturers who had been allowed to spread production over a considerable period were adopting procedures which "would best serve the interests of all concerned. The question has been raised, however, in some instances as to whether manufacturers are in fact using this discretion in a way to secure the least possible dislocation and hardship to labor." He repeated his earlier urgent recommendation that close cooperation with the Employment Service be maintained "so that the necessary steps can be taken for the absorption of the labor employed."[4]

OHIO AREA

Ohio, too, was in difficulty. Cleveland, Toledo, and Dayton all were receiving orders for ordnance cancellations or curtailment. In addition, winter would bring seasonal idleness to many other workers. There was a prospect that plants might remain closed for "at least 2 months because of lack of confidence in price of raw material and lack of commercial orders and inability to procure raw material." Decrease in the rate of cancellation was urged. It was certain that this Ohio area was due for serious unemployment.

Cancellation of contracts in many instances involved large labor forces and millions of dollars on a single contract with a single firm. Such situations are typified in the following telegram of December 19, 1918, from the Ohio office of the Federal Employment Service regarding the unemployment imminent in that State.

> We have received notice this week Cleveland ordnance division of cancellations affecting 60 firms in Cleveland. We have 6 representatives interviewing firms to ascertain number of employees that will be released. The following firms claim that if work on contracts is stopped at once, that will make releases as follows:
>
> Cleveland Steel Products, 475 men, 60 women; Cleveland Hardware, 1,000 men, 200 women; Teplar Motor, 900 men, 100 women; Brown Hoisting Machine, 1,000 men; American Multigraph, 1,000 men, 1,400 women; McMyler Interstate, 1,400 men; Winton Motor, 1,200 men, 200 women; Cleveland Variety Iron Works, 250 men; Cleveland Tannery, 125 men; Browning Co., 100 men; Hydraulic Pressed Steel, 650 men; McKinney Steel, 150 men; Cleveland Crane Engineering, 100 men; Cuyahoga Stamping, 200 men, 100 women; Cleveland Brass & Copper, 450 men; Damascus Brake Beam, 150 men; Ohio Trailer, 100 men; Lee C. Melville, 50 men.
>
> A number of other firms interviewed will continue with present force on commercial work. Twenty-two firms, not yet interviewed, it is reported will release approximately 5,000 men. In addition to men released by cancellation of contracts, there are large numbers idle due to close of lake navigation season, and about 2,000 men in building trades idle. Employment officers, despite careful

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[3] National Archives. War Department, Purchase, Storage and Traffic File 164—Connecticut; Memorandum from Chief of Procurement Division, Nov. 21, 1918.

[4] Idem, War Department, Purchase, Storage and Traffic File 164—Labor; Memorandum to General Goethals from Benedict Crowell, Dec. 26, 1918.

inquiry, every day are unable to secure orders for any considerable number of these unemployed workers, and report that large numbers are being turned away from the plants. Majority of these thrown out through cancellation of war contracts from present prospects must remain unemployed for at least 2 months because of lack of confidence in price of raw material, and lack of commercial orders, and inability to procure material. Would suggest that you urge slowing down of cancellation program. Any necessary investigation should be made promptly as firms have been notified by Ordnance Department and are now starting to release men.

MICHIGAN AREA

The situation was similar in Michigan. There the district ordnance branch informed the regional director of the Employment Service "that as their orders to cancel were final they could not see any reason for discussing with us the advisability of cancelling or not cancelling orders." Possibly the district ordnance officers gave less consideration to the labor situations arising from shut-down of plants than had been contemplated by their superiors in Washington.

NEW JERSEY AREA

Organized labor and organized industry of the State of New Jersey sent a joint appeal for modification of stoppage orders. They proposed the completion of all contracts where materials had already been obtained unless the materials could be "profitably diverted to other immediate industrial use." They referred to "the order recently issued by the Government that manufacture of war supplies must cease on January 31, 1919." The War Department replied: "While it is necessary to discontinue the manufacture of war supplies no longer needed and absolutely useless, every effort has been made in directing such continuance to taper off in production activity to the end that labor and industry may gradually shift from war to a peace basis and unnecessary umemployment be avoided."

BUFFALO, N. Y., AREA

The effect of contract cancellations and the resulting threat of attendant unemployment are illustrated by the experience of the Curtis Airplane Co. of Buffalo which was one of the outstanding producers of airplanes during that period. Up to the cessation of hostilities this company, like thousands of others, was concentrating all of its energies upon increasing output. After months of expanding effort, of increasing plant and equipment, and of meeting the problems of manpower shortage, the whole program collapsed almost overnight.

The Army, within 4 days after the Armistice, cancelled contracts for planes valued at approximately 50 million dollars. The indications were that the Navy and the Bureau of Aircraft Production would also cancel or curtail, to the amount of 13 million dollars. The company had, by November 15, dismissed about 7,000 women and it was inevitable that a large number of other employees would be dropped.

These early cancellations were for the finished product. During December 1918 the company received almost 100 telegrams canceling or limiting production on parts such as bolts, nuts, screws, gaskets, etc. In almost every case the telegram included the phrase, "Incur no further expense." The resulting confusion and concern can be imagined. Many of these cancellations affected the work of subcontractors, many of them outside of the immediate Buffalo district.

During the last week in December the U. S. Employment Service reported 10,000 unemployed in Buffalo, not including those laid off for inventory. By the middle of January this number had increased to 12,000 and the end was not yet in sight.

Conditions in Small Companies

It must not be forgotten that there were little firms, working on subcontracts, that were scattered about the country in places where, even though a comparatively small number of persons were thrown out of work, the whole community suffered. A typical case was that of a firm in Yonkers, N. Y., which had a prime contract with the Signal Corps for 5,000 miles of outpost wire. A Boston firm had been given a subcontract for making the cotton insulation tubes for this wire. This Boston firm then subcontracted again for cotton braiding for this insulation. What happened?

On November 27 the War Department received a telegram from the Liberty Cotton Mills in Dallas, Ga., alarmed because of the cancellation of the Boston contract. Dallas is a small town not far from Atlanta. The Liberty Cotton Mills provided employment for practically all the industrial workers in the town. The telegram said, "Entire mill on this contract, and will throw 100 employees out of work. There is no other work in this town they can do. Advise if you cannot allow us to continue on this contract until we can secure other business."

The War Department asked the U. S. Employment Service to investigate the labor situation at the Georgia plant, and sent the following telegram to the Liberty Cotton Mills:

> Your telegram received. In connection with War Department contracts we are doing our best to taper off production with due regard to the interests of industry and labor and in this connection are receiving the advice and assistance of the War Industries Board and the Department of Labor. You will recognize it is impossible for us to intervene in connection with subcontracts and subcontractors.

The gist of the War Department's telegram was really contained in the last sentence. The prime contractor in Yonkers had been notified earlier to discontinue production after "working up goods in process." What happened to the various subcontractors was his responsibility, and the Government was relieved of all obligation for payment on outstanding subcontracts or for the welfare of the workers.[5]

These situations, occurring in widely separated areas, have been told in considerable detail since they are typical of the cross currents, the misunderstandings, the honest efforts, and the various interests which must be considered in any report of the situations which existed in the crowded weeks following the Armistice.

Public and Other Reactions and Appraisals

In a guarded but fairly optimistic analysis of the business and financial situation for December 1918, the Federal Reserve Board said, in part:

> In general, the transition from the war to the peace basis has thus far proceeded with very considerable smoothness and with decided lack of friction. Such

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[5] National Archives. War Department, Purchase, Storage and Traffic File 164.

> slackening of business as has occurred is described as due to conservatism and hesitation, the outcome of a desire on the part of producers to know more of public policies and the probable trend of business.
>
> Thus far the process of readjusting labor to the new conditions has caused but little inconvenience or difficulty. Labor set free in war industries has been steadily absorbed by general business, so that the principal effect thus far of the increasing free supply has been merely that of relieving a previously existing shortage. There is still an excess of demand at many points. In some places considerable numbers of employees have been dropped, but of these a part were temporary workers who had taken employment partly in order to aid war production, while many others have been promptly reemployed. Costs have altered but little, and the high expense of living has made employers feel that it was incumbent upon them to maintain wages, so far as practicable, pending distinct revision of prices for necessaries. In some cases it is reported that there is a tendency to a "settling down" upon "a higher level of prices and a higher average of wages than prevailed from some time preceding the war."

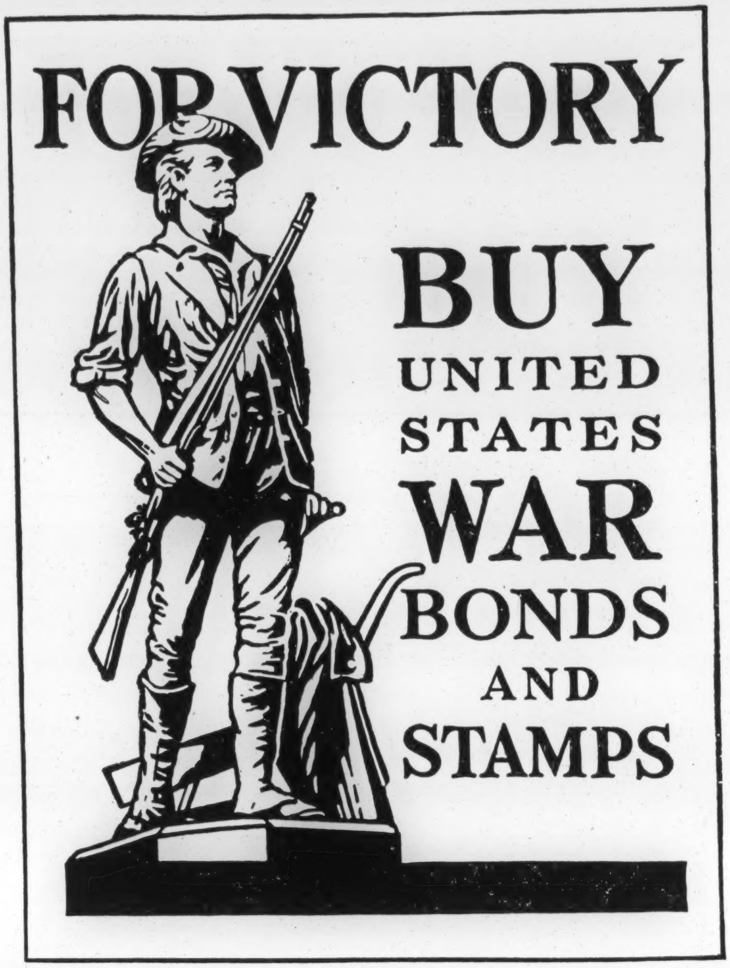
In this connection it may be noted that the combined wholesale-price indexes of the U. S. Bureau of Labor Statistics remained unchanged throughout the last quarter of 1918. However, the retail prices of cost-of-living items, which had moved steadily upward throughout the year, advancing almost 12 percent between January and December, continued their upward movement after the Armistice.

The Christian Science Monitor on December 2, 1918, drew attention to the profits which industrial companies had "piled up" during the war period and stated that these profits "should enable them to go through any ordinary period of depression." It listed a range of earnings per share for the 4 years ending December 31, for six of the largest industrial companies. These ranged from $71.80 for General Electric to $214.35 for General Chemical.

Although Congress was doing little to provide legislative authority for aiding prospective unemployment, there was almost daily debate on some phase of demobilization. Senator Chamberlain, a strong supporter of the Administration, and Chairman of the Senate Military Affairs Committee throughout the war, openly criticised the War Department for its seeming lack of policy in the demobilization of the Army and for inadequate publicity. He said that they "had no policy and they have not let the American people know what plans, if any, they have, so that they may know how to govern themselves."

As demobilization of the troops proceeded, the lack of authority to expedite the transfer of the released servicemen out of the demobilization centers became an increasing problem. One expedient after another was tried and the results received considerable publicity. Soldiers were given in money the cost of transportation to their homes, free to buy tickets wherever they pleased. Already they were arriving in the cities, improvident, "broke," away from home without work, applicants for civilian relief. It was not until February 1919—too late to avoid an unfortunate situation—that the law providing for travel allowance was changed to provide "5 cents per mile from place of discharge to his actual bona fide home or residence, or original muster into the service."

So the year 1918 ended on a note of uncertainty, criticism, and concern. The early months of 1919 were to be a difficult period for the American people.


FOR VICTORY
BUY
UNITED
STATES
WAR
BONDS
AND
STAMPS

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Demobilization of Manpower, 1918-19[1]

Part 1.—Plans for Returning Soldiers to Civil Life

Summary

UNTIL the war is won, the spotlight must be focussed on the process of building, training, and equipping our armed forces. Nothing can be allowed to detract from the concentration of national energy necessary to win a complete victory over the enemy at the earliest possible moment. The army of production takes its place, along with the armed forces, in this concentrated effort. Nevertheless, a knowledge of the relative and absolute magnitudes of the mobilization of manpower and economic forces involved in this war requires that, behind the scenes, serious thought be given to the problems of returning the soldier and the industrial worker to peacetime activities.

The same necessity existed in the first World War. Study of the problem of demobilization of the soldiers was not begun until a month before the end of the war, however, and then the need for haste resulted in mistakes that might have been avoided under more leisurely planning and consideration. No program was adopted for the effective passing of the industrial worker to peacetime production. The inevitable appearance of unforeseen problems which arose during demobilization at the close of the first World War will repeat itself at the close of this war. Further, the task will be much greater; the number of men will be three times as large as in 1918–19 and soldiers from the United States will have served longer and in more combat areas, so that the period of their demobilization may be longer than was the case after World War I. The magnitude of current industrial production is a forecast of the problems of transition and contraction.

For these reasons it seems probable that that earlier experience may be of value in planning the gigantic task of demobilization that lies ahead. The present article, which relates solely to the demobilization of the soldiers, reviews the four proposals for the return of servicemen to peacetime pursuits that were advanced in that earlier war period, showing where they originated, who supported them, and their respective merits and disadvantages.

When the first World War came to an abrupt end with the signing of the Armistice on November 11, 1918, the armed services of the United States had been expanded from a peacetime force of about 380,000 to almost 5,000,000. About 3,700,000 of these, constituting the "emergency army" (that is, those enlisted or inducted during the war), were eligible for immediate discharge when the war ended.

Official consideration of plans for the discharge and return of these men to civil life had been started a month before the Armistice.

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[1] Prepared in the Bureau's Division of Historical Studies of Wartime Problems by Stella Stewart. Additional parts of this study will appear in future issues of the Monthly Labor Review.

This left far too little time for adequate preparations for so complicated a task. The method finally adopted was the traditional plan for demobilization by military organizations. The military authorities favored this plan and it was the only one for which regulations and administrative procedures could be quickly developed at so late a date.

However, three other plans had been advanced, proposing demobilization (a) by industrial needs or occupations, (b) by locality, through the use of the local or regional draft boards, and (c) by length of service.

(a) The first plan, demobilization by occupation, had been adopted originally by the British, but proved to be so unfeasible that new legislation was passed, allowing the men to be withdrawn on the general basis of length of service.

In both Great Britain and the United States it was civilians who proposed and supported the occupational-demobilization plan. The plan's proponents in the United States recognized that, to be successful, it must be predicated upon an exhaustive analysis of the industrial situation of the country, especially if it was to be used for providing employment for skilled and unskilled discharged soldiers, many of whom had developed new proficiencies during their service and would not wish to return to their old occupations. Such an analysis had not been made.

Another major defect of the plan was its disregard of the instinctive individualism of the average American and of the fact that regimentation after return to civil life would prove distasteful. This demobilization system was carefully reviewed by the General Staff but ultimately rejected.

(b) The second method, that of using draft-board machinery for facilitating discharge, was developed by the Provost Marshal General who had been closely connected with the operation of these boards during the war. He argued that the local communities could do more than any other agency to reestablish the released soldier. He insisted that the problem of "finding the job for the men and of replenishing industry and agriculture at the point of depletion" could best be done on a local scale.

His plan was favored by many civilian groups who thought that if the men were returned to the communities from which they came they would be more readily drawn into the economic life of these areas and this, in turn, would relieve the situation in the large industrial cities near debarkation camps, where there would inevitably be a brief period of great unemployment as the munitions plants reverted to peacetime production.

The Provost Marshal General's proposal was forwarded to the Secretary of War and then to the Chief of Staff. However, the military-unit demobilization plan had already been adopted and announced, and it was then too late to utilize even the best features of the draft-board plan.

The value of many of the aspects of the draft-board plan became apparent during the winter and spring of 1919 when the War Department was besieged by citizens of all classes urging that the released soldiers be withdrawn from the industrial centers which were also faced with the problem of dealing with thousands of unemployed war workers for whom the Federal Government had provided no means of carry-over from wartime to civilian employment.

(c) The third method, discharge by length of service, was rejected for valid reasons. The country had been at war for only 18 months, and the majority of the men had been in service a year or less. It was important that the men in France, regardless of period of service, should be returned to this country as soon as possible.

Review of these several proposed systems of demobilization leads to the conclusion that it was regrettable that plans could not have been perfected far enough ahead of the need for their application to have incorporated the best and most feasible features of each. This would have required the sympathetic cooperation of the professional soldiers, familiar with military procedure, and the trained civilian groups which were familiar with the industrial and economic needs of the country.

Expansion of the Army

The story of demobilization of the Army after the first World War cannot be intelligently evaluated without some knowledge of the expansion of the Army to its size at the time of the Armistice. The United States has never maintained a large standing Army, because of its geographical situation and its amicable relations with its neighbors on the North American continent. For protection from foreign aggression, this country has depended upon a strong Navy.

The American people were loath to accept the inevitability of participation in the World War of 1914–18. When the United States entered the war in April 1917, therefore, it was unprepared from both a military and an industrial standpoint. The achievements of supply of manpower and material during the following 18 months were striking and at that time unparalleled.

On April 1, 1917, just prior to the entrance of this country into the war, the personnel of the armed forces of the United States numbered 378,619. Of these, 291,880 were in the Army. Immediately following the declaration of war on April 6, enlistment was accelerated and was heavy throughout April, May, and June.

From the beginning of hostilities the American military experts declared themselves in favor of the "selective draft" as the only democratic method for increasing the size of the Army. They emphasized that it would distribute the burden of combat equitably through all areas of the population, all social levels, and all occupational groups. A bill to provide for "selective service" was introduced into Congress almost immediately after the declaration of war. It was not a popular bill, being termed "the Administration's program of conscription." However, it became a law on May 18, 1917. The act called for the registration of all men "between the ages of 21 and 30 years, both inclusive," but with the proviso that men should be drafted only if voluntary enlistments did not provide the 500,000 additional men needed immediately. It differed from similar acts of the Civil War in that no bounty could be offered to induce enlistments.

Altogether, 9,780,535 men responded to this first registration, held on June 5, 1917. This number proved inadequate for the rapidly increasing military demands, partly because of the number of deferments and exemptions which greatly reduced the number of effectives in Class I, available for military service. Another limitation was the limitation of the age requirements for military service.

On May 20, 1918, Congress passed a Joint Resolution requiring registration of men reaching the age of 21 after June 5, 1917, and authorizing the President to require further registrations. Under this resolution there were two registrations, totaling 10,679,814. It was from these early registrations that all inductions into active service were made.

It became evident by the summer of 1918 that the expanded military campaign proposed for the spring of 1919 would require many more men than were available from the above groups. Therefore Congress in August 1918 extended the age limits for military service to include men between the ages of 18 and 45, inclusive, but the Armistice came before any of the 13,229,762 men registered under the amendment were inducted.

The gradual expansion of the armed forces between April 1, 1917, and the Armistice in November 1918 is shown in the accompanying table.

Expansion of the Armed Forces of the United States After April 1, 1917, and Total Strength on November 11, 1918 [1]

Item	Total	Army	Naval forces
Number in armed forces, April 1, 1917	378, 619	291, 880	86, 739
Additions	4, 412, 553	3, 893, 340	519, 213
Selective Service	2, 810, 296	2, 810, 296	(2)
Enlistments	1, 371, 970	879, 258	492, 712
Commissions	230, 287	203, 786	26, 501
Total strength, November 11, 1918	4, 791, 172	4, 185, 220	605, 952

[1] Report of the Provost Marshal General, December 20, 1918 (tables 79 and 80, pp. 223 and 227).

[2] Additions to Naval forces by induction were negligible.

Troops Eligible for Discharge at Time of Armistice

Only the "emergency army," made up of men enlisted or inducted during the war, was eligible for immediate discharge. What is more, some of the inducted men were en route to camp when the fighting ceased and so were little affected by the problems of demobilization. When the Armistice came, this new emergency army was concentrated in two big groups, consisting of the forces still in cantonments in the United States, and the American Expeditionary Force in France. Small numbers were stationed in the insular possessions and in Siberia. The following statement shows the distribution of the "emergency" troops on November 11, 1918.[2]

	Number	*Percent*
In Europe	1, 981, 701	53. 5
At sea en route to Europe	22, 234	. 6
In the United States	1, 634, 499	44. 1
Total	3, 638, 434	98. 2
Others	64, 839	1. 8
Grand total	3, 703, 273	100. 0

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[2] Annual Report of the Secretary of War, 1919, Vol. I, Part I, p. 448.

Initial Steps Toward Demobilization

The Secretary of War commented in his annual report in 1919: "The problem of demobilization of United States forces was different from that of other countries since its pivotal or key men had not been withdrawn from industry nor had its manpower been drafted to the same extent as those of our Allies."[3] However, later events indicated that, even so, demobilization could not be satisfactorily accomplished without definite plans developed well ahead of their need. The Secretary himself said, "The first steps in demobilization were taken while the policy itself was being formulated."[4]

The first move toward demobilization made by the General Staff was on October 8, 1918, just a month before the Armistice. It was then suggested that, because of the enormous expense connected with the military establishment and the desirability of a speedy return to normal economic conditions, repatriation and demobilization of the armed forces should be accomplished with the least practicable delay.

At about the same time an informal note was sent to the head of the Army War College: "There are one or two questions it seems to me should be studied and worked out so that you shall be good and ready for any contingency. The first of these is the plan for demobilization and musters out. * * * I do not want to advertise it too much at present as it might be thought to be peace propaganda."[5] The War Plans Division immediately began a study of "plans." Expedition was urged, since other divisions would need to review the final report, but even then great secrecy was urged.[6] Aside from the development of general policies it was necessary for each branch of the service (motor transport, signal corps, engineers, chemical warfare, services of supply) to make its own specific plans.

The formal report to the Chief of Staff analyzing the various proposals for demobilization and making recommendations as to general procedures was not forwarded until 10 days after the Armistice, but undoubtedly major decisions had been reached earlier. No demobilization plan adopted would have been universally acceptable, but this lack of preparedness and its results brought continuing criticism from every quarter.

Proposed Methods of Demobilization

The General Staff reviewed four distinctly different policies for the demobilization of the soldiers at the close of World War I. One was accepted, and three were rejected.

The method adopted, that of discharge by military units, is a matter of record. The public is less familiar with the other three plans. They proposed demobilization (a) by industrial needs or occupations, (b) by locality (through the use of the local or regional draft boards, and (c) by length of service.

These methods separate themselves into those originating in civilian groups, whether or not they were in the civil establishments of the Federal Government or attached to the War Department; and those supported by the professional military groups in the offices of the Chief of Staff, the Adjutant General, or the Provost Marshal General.

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[3] Annual Report of the Secretary of War, 1919; Vol. I, Part I, p. 14.

[4] Idem, p. 453.

[5] Army War College files, Chief of Operations, General Staff, to President, Army War College.

[6] Idem, Chief of Operations' Memorandum of October 16, 1918.

The civilian programs were the result of investigation and careful consideration by two separate but sympathetic groups. The first open approach to the demobilization problem was through the civilian experts who were working with the War Department on personnel classification. This group included outstanding psychologists and personnel administrators, most of whom were in uniform and working closely with Army officers in the Adjutant General's office. The second civilian group consisted of economists and executives in the Department of Labor (chiefly in the War Labor Policies Board and the U. S. Employment Service) and in the War Industries Board.

There was frequent conference and interchange of ideas among the various civilian groups, but there is little evidence of any genuine effort at mutual understanding between these groups and the military strategists in the War Department. There is, however, considerable evidence that each group pressed its proposals upon the Secretary of War, himself a civilian.

DEMOBILIZATION BY INDUSTRIAL NEEDS OR OCCUPATION

The civilians, both in the established Government departments and in the emergency war agencies, were deeply conscious of the difficult economic, industrial, and fiscal situation which would confront the country with the cessation of production for war, and the inevitable interval of uncertainty as the industries of the Nation took stock and made their essential readjustments of program, plant, and personnel. There was an undisputed need for an extensive and intensive survey of the country's industries, of their ability to return promptly to peacetime production and so keep to a minimum the unemployment attending the transition period. The civilians' study of these questions led them to the conclusion that "the rate of absorption [of labor] into industry is the active and variable factor in the demobilization problem." [7]

It was logical therefore that a proposal for industrial demobilization based upon industrial needs should gain their support.

British plan.—The details of such a plan had been worked out and adopted in Great Britain, partly in the War Office but mainly in accordance with civilian opinion. Under this plan, men needed for industrial and civil reconstruction would be the first to be released from the Army; and the rate of demobilization would be controlled by industrial needs.

A member of the United States Committee on Classification of Personnel of the Army spent some time in England in the spring of 1918. He studied this plan carefully and came back convinced that some adaptation of the plan to the situation in the United States would greatly facilitate industrial readjustment and would insure "that the men in the Army shall be so dispersed that skilled and unskilled labor in its many classifications of kind and degree shall be made available for industrial absorption as needed." [8]

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[7] National Archives. Department of Labor, War Labor Policies Board: Memorandum to Chairman of the Board from Walton H. Hamilton, October 28, 1918.

[8] Army War College. Report to the Secretary of War on British Plans for Demobilization and Recommendations as to the American Program.

An analysis of the British plan, to be used as a basis for approaching the American problem, was prepared and a recommendation for the adoption of this plan was submitted to the Adjutant General and the Secretary of War in the summer of 1918. The two civilian groups were working together and by the fall of 1918 agreed that, should the plan be adopted, some cooperative arrangement should be made with the Employment Service of the Department of Labor in its administration.

It is possible that the greater problem of the readjustment of the country's industries to peacetime conditions, and concern over the effect of the returned servicemen upon a surplus labor market during a period of mounting unemployment, obscured in the minds of these men the fact that the soldier was a citizen with rights and privileges as an individual when he had finally discharged his duties as a soldier. The British plan, as reported, provided that men should be drafted from the Army for service in civil life upon the declaration of peace much as, upon the declaration of war, men were drafted from civil life for service in the Army. Whatever the desirable factors of the plan, it took into little account the instinctive individualism of the average American, and gave scant consideration to the servicemen's possible negative reaction to further regimentation upon his release from the Army, but provided that he should be moved about as best fitted the success of the scheme. This fact was well stated by a member of the staff of the War Labor Policies Board: "Any policy of reconstruction is largely dependent upon the spirit with which it is met by the men to be demobilized. No one can say with certainty what the effect of adventures, discipline, physical training, etc., which men have experienced in the Army, and the psychology resulting from the offer of sacrifice, will be."[9]

Attitude of plan's proponents.—Although the plan for demobilization by industry was ultimately rejected by the Chief of Staff and the Secretary of War, brief consideration should be given to some of its specific details and to the attitudes of some of its supporters. To the Committee on Classifications it was "obvious that America * * * must demobilize by trades if a disastrous condition of unemployment and unrest is not to ensue. Demobilization by * * * any other schedule is not feasible. * * * The interests of the Army * * * must be subordinated to the civic interests."[10]

Under such procedure the primary factor in the priority of demobilization would be the individual's industrial classification, and the first administrative task would be the classification of officers and men by profession, trade, or occupation. This task was already partially done, as the so-called "qualification cards" of the men were based upon their skills and experience at the time they entered the Army. It was suggested that these cards, which had "proved effective in taking men from industry and placing them right in the Army," be used for redrafting them into industry, for, in the opinion of the committee, "there is just as close a relation between classification and placement in industrial life as there is between classification and Army placement; it is all part of the same problem." However, there was no record of new skills acquired in the Army, nor of the possible desire for change resulting from the experiences in the Army and in new and different surroundings. It was granted that an "exhaustive analysis of the industrial situation of the country and the preparation of a program of reorganization on a peace basis" was essential to the functioning of the plan, and it was suggested that the Department of Labor should assume this task.

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[9] National Archives. Department of Labor, War Labor Policies Board: To Chairman from G. S. Arnold, July 24, 1918.

[10] Army War College. Report to the Secretary of War on British Plans for Demobilization and Recommendations as to the American Program.

Economists on the staff of the War Labor Policies Board were, in the summer of 1918, engaged in analyzing the major problems of industrial readjustment. Elaborate memoranda were prepared but they dealt largely with generalizations and were of necessity speculative. One member of the staff acknowledged this and urged the substantiation, by fact, of some of the statements made. The following abstract contains the essential statements on the release of the soldier.

> For this large body to be projected upon the community without provision for immediate employment is unthinkable. And however confident we may be that they can shortly be assimilated there is bound to be an intermediate period of great confusion unless some elastic source of employment is provided—work which may be available for all, but work of such a character that, if the conditions of the country provide occupation more rapidly than is expected, it can be postponed for future completion. Enough of such employment should be provided and it should be so elastic in its nature that it will for a period of 2 or 3 years provide work for the maximum estimate of unemployed men, and yet, in part at least, not be sufficiently pressing or important to offer competition to permanent necessary employment. It might be advisable to do much of this work before the men are actually discharged from the Army, with the provision, of course, for the payment of industrial as opposed to military wages. (National Archives. Department of Labor, War Labor Policies Board: Memorandum to Chairman from G. S. Arnold, July 24, 1918.)

A longer and more comprehensive memorandum "Upon the Problem of Demobilization" discussed in great detail the problem in general and the obstacles which would be encountered, and gave many specific suggestions for carrying out a policy of demobilization by industry.

The memorandum stressed the necessity for correlation of military discharge with accessibility to reemployment, without periods of "idleness and dependency." This required recognition of the fact that munitions workers, released in large numbers from war plants, would also be seeking employment. Thus, there were "two complementary problems of employment to be solved. To give employment to discharged soldiers by denying it to munitions workers" was to "solve one problem of unemployment by creating another." In other words, if the situation was to be met squarely, enough jobs must be provided to satisfy both groups, and at a high rate of absorption, for it was probable that the release of war workers would not be at the even flow anticipated for the release of soldiers.

The key problem of providing a "mechanism" for discharge was well stated. There was no doubt that failure so to provide would mean failure of the plan as a whole. "It will probably involve the reorganization of the Army into new units, based upon occupational status, for demobilization purposes. * * * Demobilization will involve not so much legislation as a long series of administrative decisions. Its success depends upon the precision and quickness with which they can be made. This depends upon the range and accuracy of information at hand and upon a mechanism for translating judgments into accomplishments." [11]

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[11] National Archives, War Labor Policies Board; Memorandum to the Committee on Classification of Personnel of the War Department from Walton H. Hamilton, October 28, 1918.

The Chairman of the War Labor Policies Board commented to the Secretary of Labor upon the "comprehensive plan" of the Committee on Classification of Personnel and said:

> The function of the War Department as the Committee views it, ends with the actual demobilization of the war, but the Committee keenly appreciates the necessity of conducting demobilization in such a way that it shall best meet the industrial requirements of the country, and shall result in a minimum of unnecessary unemployment, and no breaking down of recently established labor standards. * * * It is necessary to determine when and where the industry of the country can re-absorb the men and whether it is possible to stimulate industry to so great a degree that this re-absorption can be effectively accomplished. * * * It is unnecessary to dwell upon the disastrous results to labor which may result from allowing the demobilization to take its course without more definite preparation than the present general speculation on problems of reconstruction. (National Archives. War Labor Policies Board: Memorandum from Chairman Frankfurter to Secretary Wilson, October 22, 1918.)

After the Armistice and even after the War Department had announced the demobilization policy which it had adopted, supporters of the industrial plan continued their exchange of views. Some of the salient points of one of these memoranda were as follows:

> * * * the physical productive capacity of the country is large enough to furnish employment to all discharged soldiers and munitions workers and to spare. But this does not prove that a purely military demobilization will furnish employment to the discharged as they need it. * * * A haphazard discharge of men and cancellation of contracts will not give men and materials in the order in which they are needed to hasten the resumption of business. * * * Whatever the ultimate capacity of the system to take labor, there are abundant reasons for thinking that unless extreme care is taken the labor market will be glutted. * * * A word must be added about the possibility of local gluts. * * * Unless the flow is locally controlled, soldiers will be demobilized in such centers as Bridgeport, Pittsburgh, and Detroit, in which most of the work now going on is under Government contract. If this happens, soldiers will be sent into markets disorganized by the involuntary discharge of munitions workers through the cancelation of Government contracts. (National Archives. War Labor Policies Board: Unsigned memorandum to Lieut. Col. Coss, a member of the Committee on Classification of War Department Personnel, November 1918.)

All of these statements reveal concern over the inevitable period of unemployment which would accompany contract cancellation, unless the Federal Government made specific provisions for bridging the gap during the months when soldiers would be leaving the Army.

Results of industrial demobilization plan in Great Britain.—Since the American proposal for industrial demobilization was premised upon the British plan which had been worked out with great care, it seems desirable to report upon the results of the British effort. At the time of the Armistice, the United States had been in the war about 18 months, as contrasted with more than 4 years for the British. (The British soldier's length of service therefore parallels the probable experience of the American soldier in this war more nearly than in World War I.) The following record of the British experiment comes from Winston Churchill's story of his participation in demobilization following World War I.[12] In January 1919, 2 months after the Armistice, Mr. Churchill had consented to take over administration of the War Office because the "temper of the Army and the problem of demobilization caused increasing anxiety." He was "immediately confronted with conditions of critical emergency." Under the plan for demobilization by occupation, "key men" in industry were being hurried back from the front regardless of their length of service, but because they were key men many of them had been at the front only a few months. Then, too, the plan lent itself to abuse, and influence released certain men ahead of their comrades without such support but with many months of Army service. The inevitable result was the undermining of Army discipline and the creation of great impatience and resentment on the part of the troops.

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[12] Churchill, Winston S.: The Aftermath—1918-28 (Preface and Chapters I and III).

It was decided that only one remedy would prove effective—a complete change in the scheme for demobilization. The new policy provided that (1) soldiers should, as a general rule, be released from the front in accordance with their length of service and their age, (2) the pay of the Army was to be immediately increased to lessen the gap between the rewards of military and civil employment, and (3) the younger men who had completed training but not yet seen active service were to be sent abroad to serve in the Army of Occupation, in place of the older men and those of long service. Once this new system was understood, the disaffection of the soldiers disappeared and later the men were discharged at an average rate of 10,000 a day.

Mr. Churchill himself deprecated the lack of coordination between the plans for meeting industrial and military needs. Possibly the results would have been better if the military group had been willing to give the new plan a sympathetic hearing and if the civilian originators of the new and untried procedure had tried to integrate it more closely with the traditional demobilization methods of the Army.

DEMOBILIZATION BY LOCALITY

A memorandum recommending discharge of the soldiers through the local draft boards was submitted to the Chief of Staff on November 11, Armistice Day, by the Provost Marshal General who had been in close association with these boards[13] during his administration of the Selective Service Act. His memorandum stated:

> The economic need of finding the job for the man and of replenishing industry and agriculture at the points of depletion is an obvious one. * * * But its complexities are so vast that any solution on a national scale will be many months in coming. In the meantime, the problem will be more or less a local one. * * * These returned men will be without jobs. There is only one agency most obviously fitted to do this [provide jobs]. * * * That agency is the one which in the first place took them out of their jobs. * * * Every local board virtually now knows where every man came from and the opportunities which exist in his community for reemploying him. * * * No measure could be more popular to the responsible interests of this country than the one here mentioned. These boards include representatives of agriculture, banking, manufacturing, commerce, labor, and the professions. They possess the confidence of their own communities in an unexampled degree. To charge them with the proposed task would meet with unanimous popular approval." (National Archives. War Department, Files of Chief of Staff: Draft Boards.)

The Government had already made provision for family allotments, term insurance, Liberty Bond allotments, compensation for disability, etc., the carrying out of which would require months of administrative activity at the best. Delays were bound to occur as a result of the difficulties of handling official investigations through a central agency far removed from any intimate knowledge of the individual facts. As the Provost Marshal General saw it, it was "imperative to employ * * * an agency localized in each community to serve as the local intermediary between the Government and the soldier."

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[13] There were 4,643 of these boards and, in addition, there were the district boards, all familiar with local and regional conditions.

He also believed that the individual welfare of the soldier would be furthered by the adoption of this method:

> The returned soldier * * * has in all times been an element of unrest in the community. * * * [He] has just been freed from a rigid system of restraint; he is something of a licensed hero; and however young, he now thinks himself a veteran, and emancipated from control. There ought to be some central agency that is charged to look after him. That agency is the local board. * * * There will be an intense need in most communities, and for a large portion of the returned soldiers in all communities, of some sort of a controlling and supervising influence. This individual welfare of the returned soldier is not exactly his moral welfare, but it is something above and beyond his economic welfare. It is not easy to describe but it is a very real thing. (National Archives. War Department, Files of Chief of Staff: Draft Boards.)

The memorandum was forwarded to the Secretary of War and then on November 26 to the Director of Operations for review. It was too late, however, for this memorandum to be considered, as orders had already gone out on November 19 to begin demobilization from camps in the United States by organization or military unit, and the adoption of this traditional method had been announced by the Secretary of War and the Chief of Staff.

Among the several groups that were early supporters of the local-board plan was the Vice Chairman of the War Industries Board. In a memorandum to the Chairman of the Board he said that it was his impression that the military demobilization plan just announced by the War Department was "one of convenience for the Army rather than one calculated to meet the demands of industry." It was the declared policy of the War Industries Board to release materials to nonwar industries in order to stimulate peacetime activities. As this would be futile without a supply of skilled labor, the Vice Chairman proposed using the local draft boards in the demobilization of soldiers still within the United States, in accordance with "the evident needs of industry for the immediate future." He emphasized the need for skilled workers and recommended that such men "experienced in food, fuel, mining, or transportation industries," be furloughed, whether here or abroad, on certificate of need from war agencies such as the Food Administration, the Fuel Administration, and the Emergency Fleet Corporation. Furlough, rather than discharge, was proposed to insure that these men would be employed where their skills were most needed. Publicity of this plan was urged "to prevent dispersion and tend to reconstruct the nonwar industries to their former status. * * * A general plan of completing discharge of our whole Army at point of origination through local draft boards is favored." Throughout, the memorandum favored some constructive and expedient method of bringing the soldiers back to their places of pre-war employment and reflected a compromise with the plan for full demobilization by trade or occupation.

The members of the draft boards were, of course, in favor of local demobilization. Not only did the communities want their men to come home, but farmers and business and professional men could give employment to large numbers of returned soldiers in their localities.

That the proposal received wide publicity is evident from the flood of letters received by the War Department in its support after demobilization was in progress. These letters were forwarded to the Secretary of War from members of Congress; they came from governors and mayors, from State councils of defense, and from citizens' committees. It is probable that propaganda stimulated some of the letters, but they continued to come throughout the winter of 1919, as the problem of unemployment became increasingly acute.

There were legal technicalities which made it impossible for the War Department to provide for the discharged soldiers the type of transportation which would insure their movement out of the cities. Legislation passed later only partially solved this difficulty. Then, too, it was stated that the proposal would prove both costly and inexpedient, that the necessary administrative details must be carried out at larger centers.

It was conceded that the use of the boards would get the men nearer their homes, but could not keep them there. "Whether the draft boards would succeed in placing men where they had come from and keeping them there is a matter of considerable doubt. It is believed, in view of the insistent demands that men be released from the camps where the work of demobilization is now concentrated and being done systematically by trained officers and men, that if the draft-board system were considered the largely increased personnel required by dispersing the same work * * * would result in a popular demand for the return to the system now being used."[14]

DEMOBILIZATION BY LENGTH OF SERVICE

The plan of demobilization in accordance with length of service, the system finally used by Great Britain, was considered by the General Staff and rejected for valid reasons. The United States had been at war a relatively short time. Most of the overseas troops had been abroad little more than 6 months. Almost 50 percent of the emergency Army was in camps in the United States, and some of these men had been in camp only a few weeks. Others, chiefly in the Services of Supply and other services needed for the administration of the camps, had served longer than many of the troops abroad.

DEMOBILIZATION BY MILITARY UNIT

As already noted, the traditional method of discharge by military organization was adopted and announced to the press by the Chief of Staff on November 16—5 days after the Armistice. This was just a month after the War Plans Division had been directed to develop plans for demobilization, and before the final formal report had been received by the Chief of Staff.

There can be no doubt that the plan of discharge by military organizations was considered by the military authorities as the method best adapted to the immediate problem. "The decision as to the essential principles under which our Army was to be demobilized was made by the Chief of Staff in person, who determined on demobilization by units. * * * He promptly and unerringly selected from the many plans proposed the one best suited to American conditions."[15] The chief claims made for this method were that it expedited discharge; that it insured the orderly return of troops, that large military units represented a cross section of American industrial life, and that because of its flexibility the rate of discharge could be controlled and provision could be made for special situations and individual cases. Under this method large units of men no longer needed could be discharged en masse. Other units needed at ports of debarkation, at convalescent centers and at cantonments, could be retained as a whole. If carried to its logical conclusion it would prevent favoritism in release of certain classes, but it could also provide for the release of certain groups needed to support the civilian economy.

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[14] National Archives. War Department, Files of Chief of Staff, Letter to the Executive Committee of the Independent Citizen's Committee of Welcome from the Chief of Operations, December 4, 1918.

[15] War Department. Files of General Staff, Lecture on Demobilization, January 28, 1921.

Demobilization was scarcely under way before complaints and requests for special treatment of individual or group cases began to pour into the War Department. The flood of discharged servicemen into the large industrial areas brought an avalanche of calls for modifications in the demobilization program. Most of the letters dealt with one of two problems—the danger to the community of too rapid demobilization, or the need for obtaining the prompt discharge of men needed in specific industries. These complaints and the tenor of the replies reflect the haste with which the reversal from mobilization to demobilization was undertaken and the desirability of a program from the outset which would have combined the best elements of the several policies proposed. The complaints mounted, most of them suggesting a modification of the system being used, in order to divert the discharged soldiers away from the large cities.

Many of the requests for action to ameliorate conditions came from Congressmen who were besieged by their constituents, sometimes from purely selfish motives, but more often in the interest of the community or of the servicemen themselves. The War Department found it difficult to answer these letters meticulously, to be consistent, and to defend the system and the results of its applications.

One of its replies contained a carefully worded statement of the efforts being made to overcome the "local shortcomings" of the operations in progress:

> Such organizations [of citizens] which find in the large cities a congregating of ex-soldiers and other persons without employment, have, it is believed, erroneously become convinced that this crowding to the larger cities is a fault of the War Department's system of demobilization, and that their proposed scheme of demobilization through the local draft boards would have prevented such crowding. It is believed that this opinion is entirely unjustified. Young men from the farms and rural communities have been taken from their secluded homes and isolated communities and have seen something of the world. The desire of such young men to go to large cities and seek the excitement and distraction there to be found is a fault of human nature that cannot be overcome by legislation or War Department regulation. The fact that discharged soldiers after their discharge go to the large cities is not a fault of the War Department demobilization but has occurred in spite of careful plans taken by the War Department to encourage soldiers to return to their homes.
>
> This phenomena [sic] of persons crowding to the large cities is not confined to the United States, but is occurring in every country that was in the war. At the completion of wars, the tendency has always been shown for soldiers returning from war to flock into the cities. * * *
>
> I have written at this length because I wished to make it clear that demobilization is proceeding in accordance with a very definite and considered policy, and the War Department feels certain that as time passes and the matter is more thoroughly understood and the facts become more completely known, the country will become convinced that the demobilization was conducted in an efficient and well-planned manner, to the best interests of the greatest number of people of the United States. (National Archives. War Department, Files of Chief of Staff;

Letter to Head of the House Military Affairs Committee from Chief of Operations, February 25, 1919.)

Another reply to a Congressional inquiry contained this understanding paragraph:

> Demobilization is inevitably an unpopular process, * * * The eyes of soldiers are turned from contemplation of the country's enemy to provision for their own future, and no man with human sympathies can fail to be moved in their behalf. But for the public official entrusted with the completion of the undertaking it is a time for self-restraint and broad vision, a time to see the larger aspect steadily and to see it whole. (National Archives. War Department, Files of Chief of Staff: Letter to Senator McKellar from Secretary of War, February 3, 1919.)

During the winter of 1919 the country was faced with a situation which necessitated many modifications of the original procedures for demobilization by military units. Finally, in March 1919, the War Department published an official statement, entitled "The Army Demobilization System Reviewed and Analyzed in Order Better to Acquaint the Public with the Many Difficult Problems Arising."[16]

At that time the country was suffering from an unemployment crisis, resulting from the cancellation of war contracts for goods of no peacetime value. The analysis of the demobilization situation attempted to explain the abrupt discharge of thousands of servicemen in the absence of a well-planned program for their reemployment, in view of the acute industrial situation. This detailed statement is, in the main, a reply to the persistent demand for the use of the draft boards for final discharge of the men. That such a necessity should have arisen leads to the conclusion that from the beginning a system of demobilization could have been used which would have incorporated the most desirable portions of each proposal. A part of this statement is a fitting conclusion to this review of the various plans proposed for demobilization of the soldiers, any one of which would have failed in some degree because of the unexpected Armistice and the delayed preparations for readjustment.

> This, then, is the tremendous problem that confronts us—to return to a country whose digestion for labor is not now of the best, hundreds of thousands of men without employment, not forgetting that they and their families deserve the grateful thanks of the Nation, and remaining keenly aware that their patriotism and sacrifice demand that they be given every possible recognition and favor.
>
> As the welfare of the country demanded our entry into the war, and its vigorous prosecution regardless of sacrifices, so does it seem that the welfare of the country at large demands our first consideration in the matter of demobilization. The absorption by the country of these returning men without disorder and without upsetting the economic life of the Nation becomes of paramount importance. The question arises—can the country digest these men best if fed into it in large contingents by discharge in certain restricted areas such as the ports of the Atlantic seaboard, or in small groups, distributed throughout the entire country in such a way that the processes of assimilation can work easily on each small group?

The administration of demobilization of the soldiers is a separate story and its results must be integrated with the coordinate problem of the release of thousands of industrial workers.

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[16] U. S. Official Bulletin (Washington), March 24, 1919 (p. 6).

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Factors Determining Post-War Job Transfers and Unemployment[1]

THE background against which all estimates of demobilization period job transfers and unemployment should be developed is the record of changes in labor force, employment, and unemployment since before the war and the further changes in these totals that are expected to take place between now and the war peak. This background is presented in table 1, which shows in terms of main components—armed forces, industry groups, and the unemployed—how the labor force was distributed in July 1930 and July 1940, how the pattern changed each year thereafter down to July 1943 and, finally, the estimated pattern at the peak of the war effort. For purposes of the present analysis it has been assumed that the war effort will reach its peak in July 1944. This assumes victory over Germany during the summer or autumn of 1944, but implies no definite assumption with respect to the date of victory over Japan and the end of the war as a whole. Should the defeat of Germany occur before July 1944, downward revisions of some of the

TABLE 1.—*Estimated Distribution of the United States Labor Force, 1930–44*

Classification	Estimated number (in thousands)					
	July 1930	July 1940	July 1941	July 1942	July 1943	July 1944—Assumed to be peak war effort [1]
Total labor force	50,053	57,400	58,300	60,600	64,800	66,300
Unemployed [2]	3,253	9,300	5,700	2,800	1,200	1,000
Total civilian employed, plus armed forces	46,800	48,100	52,600	57,800	63,600	65,300
Armed forces [3]	263	500	1.700	3,800	9,300	11,300
Civilian employed	46,537	47,600	50,900	54,000	54,300	54,000
Agricultural employment [4]	12,193	10,800	10,700	11,700	12,100	12,000
Nonagricultural employment [5]	34,344	36,800	40,200	42.300	42,200	42,000
Nonagricultural employees [6]	28,517	30,638	34,939	37,234	38,364	38,600
Manufacturing	9,005	10,411	13,087	14,641	16,136	17,200
Metals, chemicals, and rubber	(7)	4,114	5,822	7,481	9,207	10,300
Other	(7)	6,441	7,265	7,160	6,929	6,900
Mining	966	907	961	923	830	800
Construction	1,718	1,660	2,100	2,108	1,218	500
Transportation and public utilities	3,675	3,059	3,362	3,519	3,683	3,700
Trade	6.025	6,462	6,837	6,504	6,290	6,200
Finance and service	3,982	4,140	4,300	4,335	4,359	4,300
Government	3,146	3.999	4,292	5,184	5,848	5,900
State and local	(7)	3,068	3,040	2,996	2,962	2,962
Federal	(7)	931	1,252	2,188	2,886	2.938
Balancing item [8]	5,827	6,162	5,261	5,066	3,836	3,400

[1] Estimates of peak war requirements prepared jointly by the Bureau of Labor Statistics and the War Manpower Commission.

[2] 1930 from National Industrial Conference Board; 1940-43 from Bureau of the Census.

[3] 1930 from Bureau of Labor Statistics; 1940-43 from joint estimates of the Bureau of Labor Statistics and the War Manpower Commission.

[4] 1930 from Bureau of Agricultural Economics (average of estimates for July 1 and August 1); 1940-43 from Bureau of the Census.

[5] 1930 from Bureau of Labor Statistics; 1940-43 from Bureau of the Census.

[6] Nonagricultural employees and components exclude proprietors, self-employed, and domestic servants; 1930 from Bureau of Labor Statistics unrevised series; 1940-43 from Bureau of Labor Statistics revised series.

[8] Difference between estimates of total nonagricultural employment and estimates of nonagricultural employees. Includes proprietors, self-employed, and domestic servants, but is not an accurate measure of this group. [7] Not available.

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[1] Prepared by the Bureau of Labor Statistics for the Subcommittee on War Contract Termination of the Senate Committee on Military Affairs.

figures in the final column of the table will be necessary to make them correspond to actual peak totals.

The volume of job transfers that will be necessary as the result of termination of the war, and the amount of unemployment that will develop in this connection, will depend essentially on four factors: (1) Demobilization of the armed forces, (2) demobilization of war industry, (3) withdrawals from the labor force, and (4) reconversion and expansion of civilian production.

The number of new job applications will depend on the first three of the four indicated factors, plus intra-industry turnover.

The amount of unemployment at any given date after the war peak will depend on both the amount and the timing of the changes under the four indicated headings.

Extent of Forces to be Demobilized

DEMOBILIZATION OF THE ARMED FORCES

The number of persons in the United States armed forces in July 1940, was half a million. It has been announced that at their peak the armed forces will total 11.3 million. If this figure is reached, and if the post-war armed force is no larger than the 1940 force, well over nine-tenths of the men in uniform at war peak will be mustered out—some of them, it may be, before Japan is defeated—and will then be either looking for work or going back to school. However, it is likely that a larger armed force than this country had in the pre-war period will be maintained for purposes of post-war defense, in which case the volume of military demobilization will be reduced accordingly. For example, if the post-war armed force in all branches of the service

TABLE 2.—*State Origins of Armed Forces at War Peak*[1]

[Estimated total for July 1944 distributed on same basis as total number of men furnished to armed forces to September 15, 1943]

States	Number of men (in thousands)	Percentage distribution	States	Number of men (in thousands)	Percentage distribution
United States	11,300	100.0	Montana	45	0.4
			Nebraska	102	.9
Alabama	203	1.8	Nevada	11	.1
Arizona	45	.4	New Hampshire	45	.4
Arkansas	147	1.3	New Jersey	418	3.7
California	667	5.9	New Mexico	45	.4
Colorado	90	.8	New York	1,265	11.2
Connecticut	170	1.5	North Carolina	260	2.3
Delaware	23	.2	North Dakota	45	.4
District of Columbia	79	.7	Ohio	610	5.4
Florida	158	1.4	Oklahoma	192	1.7
Georgia	226	2.0	Oregon	102	.9
Idaho	34	.3	Pennsylvania	904	8.0
Illinois	700	6.2	Rhode Island	68	.6
Indiana	271	2.4	South Carolina	136	1.2
Iowa	192	1.7	South Dakota	45	.4
Kansas	147	1.3	Tennessee	237	2.1
Kentucky	215	1.9	Texas	554	4.9
Louisiana	192	1.7	Utah	45	.4
Maine	68	.6	Vermont	23	.2
Maryland	170	1.5	Virginia	215	1.9
Massachusetts	418	3.7	Washington	158	1.4
Michigan	452	4.0	West Virginia	170	1.5
Minnesota	215	1.9	Wisconsin	237	2.1
Mississippi	158	1.4	Wyoming	23	.2
Missouri	305	2.7			

[1] Data furnished by Selective Service System, based on local board inventory.

for purposes of policing, etc., numbers 2.5 million, somewhat under four-fifths of the peak force will be demobilized.

Table 2 shows the estimated State origins of the armed forces at war peak, and thus provides a basis for calculating the approximate impact of military demobilization on the labor force in each State under any given assumption regarding the size of the armed forces to be retained in the post-war period.

DEMOBILIZATION OF WAR INDUSTRY

Workers will be laid off in three situations: (1) Many munitions manufacturing plants will close down. (2) This will adversely affect employment in underlying industries supplying raw materials, transportation, etc., until civilian production picks up. (3) In some communities that have been dependent on munitions production there will be lay-offs in stores, restaurants, and service industries. Beyond this inevitable curtailment, it must be noted that high wages derived from war production have helped to support the production of goods and services for civilian use, and that the prospect of a relatively high level of national income is essential to the maintenance of this employment.

The amount of manufacturing employment resulting from the munitions program may be estimated in two ways. At the peak of the war effort some 5 to 6 million workers will be engaged in the final stages of producing combat matériel (including in this category ordnance, ammunition, aircraft and aircraft parts, and naval and merchant ships). This does not count the workers producing raw and semifinished materials, equipment, and supplies that now go into munitions but also have peacetime uses. Alternatively it may be noted that, in 1940, just over 4 million persons were employed in the metal, chemical, and rubber manufacturing industries. At that time the end product of their labors had peacetime uses. At the peak of the war effort the number will be about 10.3 million; and whether or not they are engaged in making essentially the same product as in peacetime, it flows finally into combat matériel. The difference of about 6 million indicates the net number of workers who would be displaced if munitions orders were wiped out and industry reverted to 1940 civilian volumes in these fields.

Most of the 5 or 6 million engaged in the final processing of combat matériel will have to find work on other items. To a limited extent they may be kept on jobs after hostilities cease, in order to complete work on orders for goods that have a peacetime use, as for example Victory ships to replace slow Liberty vessels and the trucks and other equipment needed for rehabilitation of destroyed areas abroad. It may also be necessary to employ up to a million people in the metal, chemical, and rubber industries (including about half this number in the final fabrication of munitions) to maintain an armed force of 2.5 million with modern equipment.

In the first instance, however, cancelation of war contracts will affect not only those directly engaged in the manufacture of munitions but the larger number engaged in producing raw materials, etc. How many of them will be laid off will depend upon how quickly producers of civilian items are able to place orders. In this sense, therefore, the extent of demobilization depends upon the rate of reconversion. In minimum terms, lay-offs on war contracts will involve some 5 million workers; the maximum, having regard to the substitution of civilian contracts for war orders, should be substantially less than 10 million.

It should be noted that the above figures refer to the curtailment of the munitions segment of manufacturing proper. Obviously the war has also brought about an expansion in some of the other components of nonagricultural employment, notably in Government and to a lesser extent in transportation and public utilities. Government, for example, has added some 2 million employees to its civilian pay rolls since 1940 as the result of the demands placed on navy yards and Government manufacturing arsenals, other branches of the War and Navy Departments, and other war agencies of the Federal Government; the basis for much of this employment, too, may be expected to disappear when the war ends.

Size of the Post-War Labor Force

In the United States the labor force grows from year to year in response to the growth of population of working age. Thus, from 1930 to 1940 the labor force increased by a little more than 7 million. Had there been no change in trends we would have expected to find 59.1 million either at work or looking for work in July 1943 and 59.8 million in July 1944. Actually there were 64.8 million in the labor force in July 1943 and there will be need for 66.3 million in July 1944.

SOURCES OF ADDITIONAL WARTIME LABOR

How many workers are likely to withdraw from the labor force? The number will obviously influence the amount of unemployment.

Before this question can be answered it is necessary to ask whence these extra workers have come. This can be most easily described not with July data, when schools are usually closed, but with figures for October 1943. At that time there were 5.8 million extra people in the armed forces or the labor force. They came from the groups shown in table 3.

TABLE 3.—*Sources of Recruitment of Additional Wartime Labor, by Age, Group, and Sex*

Source of added workers	Age group	Number (in thousands) of—	
		Males	Females
All sources		3,224	2,570
Schools primarily	14–19 years	1,611	746
Colleges primarily	20–24 years	497	145
Nonworkers primarily	25–34 years	665	96
	35–64 years		1,460
Retired primarily	65 years and over	451	123

PROBABILITIES OF LABOR-MARKET WITHDRAWALS, BY AGE GROUPS

The extra males 25–64 years of age are likely to disappear from the labor market whenever it becomes hard to find work or to hold a job. At these ages almost all men are normally compelled both by economic necessity and by custom to have a job or to look for work. There are some who cannot work. A certain number, however, prefer not to work or are unwilling to expose themselves to the rebuffs of the labor market, and in periods of depression a large proportion of this group become convinced that they are unable to work. It is from among these that some 665,000 extra males have been recruited. They are likely to disappear from the labor market again.

The extra males and females 65 years of age and over consist both of workers who have been called back from retirement and of those who have postponed their retirement. With an established system of old-age insurance and old-age assistance, a large proportion of these workers will normally retire. To the extent that provisions for retirement are extended or liberalized, their withdrawal from the labor market will be hastened. These 574,000 extra workers are not likely to remain long in the labor force.

It is noteworthy that the number of females 20–34 years of age in the labor market is little greater than normal. At these ages it is almost as usual for unmarried women to work as it is for men. Therefore there was not a large number of women without domestic responsibilities from among whom recruitment was possible. At these ages also married women are most likely to be rearing children. This group, more than any other, finds difficulty in taking jobs. The members of the group are likely to be among the first to withdraw when the patriotic appeal to work ceases, when the possibility of normal family living is restored, or when it is no longer so easy to find high-wage employment as it is today.

The problem of withdrawals from the labor force is therefore largely confined to two groups: young persons of school and college age and women 35–64 years of age.

Withdrawals of young people.—The larger of these groups consists of young people. With respect to them it is wise to think of the problem as one of reducing the size of the labor force. This does not necessarily require the withdrawal of any of those now working. Sooner or later virtually all of them, male and female, would have sought work. What has happened is that, voluntarily or otherwise, boys 18 years or younger went into the armed forces, some of whom would normally not have quit school or college until they were 19, 20, or 23. Boys and girls of 16, 17, or younger ages quit school to take jobs. Some of them have now passed the age at which they would normally have left school and have become a more or less normal part of the labor force, but the labor force is continually refreshed by fresh recruits who are leaving school prematurely. Within this group are 2.8 million who normally would still have been in school but are now at work or in the armed forces. Many will prefer in any event to keep on working. This may be especially true of girls who normally take jobs between school and marriage, and who may see little long-run advantage in going back to school.

Even if none of these individuals, male or female, chooses to go back to school, this segment of the labor force can, however, be reduced to approximately normal proportions within 1 or 2 years by inducing young people who are in school when hostilities cease, to stay in school as long as their brothers and sisters did in 1940, instead of leaving at as early an age as is customary today. If this is the only method used to return this segment of the labor force to normal size, it will mean that, especially during the critical conversion period, there will be several million extra workers in the labor market.

It will, thus, be important to induce as many withdrawals as possible by encouraging the maximum number of these young persons to return to school or college. This effort may be especially successful among young men in the armed forces, for they were not choosing jobs in preference to school. Obviously, the extent of withdrawals of younger persons to complete their general education or to acquire special training will depend on a number of factors about which positive statements cannot be made at this time. In particular, it will depend on the effectiveness with which our educational institutions enlist the interest of young persons who have been through war experiences, on the steps taken by Government to create educational opportunity for all young persons through the provision of financial assistance where that is necessary, and on the extent to which all young persons are now made aware of their probable need of further formal education. If young persons could be induced to regard this as a period when their services are more needed, and when many of them have a better opportunity to make large earnings, than will be the case 2 years hence—in other words to view the war and transitional period as an abnormal timing of education and practical experience—it might help to stimulate their return to school. Perhaps this campaign needs to be directed, above all, to the half million or more children of 14 and 15 who have taken jobs and may be permanently handicapped if they do not get more formal training.

Withdrawals of women.—Although the pressure in the labor market of large numbers of young persons who would normally have continued in school will swell the number of job seekers in the transitional period, the extra number of women 35 years of age and over who are now working will contribute somewhat to a permanent increase in the labor force. This group, now numbering a million and a half, and which may number 2 million by the peak of the war effort, is composed about equally of women under and over 45. It may be noted that of the present unusual supply of a million and a half, at least half a million are engaged in farm work and will probably leave the labor market as soon as the farms can be operated without their services as agricultural workers. Furthermore, there is some evidence that an especially large proportion of extra female workers 35 to 44 years of age are farm workers. Between April and October 1943 (the only dates for which data are available) almost all of the increased employment of women in these age groups occurred on farms. Thus, if we assume that there are today about a million more women 35 years of age or over in nonagricultural employment or looking for such work than would normally be the case, it is probable that about three-fourths of them are 45 years of age or over and that of this total comparatively few have children less than 14 years of age. It is almost certain that at least a few hundred thousand of these women will continue in the labor market. It is almost equally certain that this more or less permanent expansion of the labor force will not total as much as one million.[2]

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[2] No allowance has been made in this discussion for battle casualties. The number of individuals who will be killed or so seriously disabled as to prevent their working cannot be estimated. Heavy casualties would affect the population distribution by age and sex, and the number of male workers. They would also result in relatively large numbers of single women and widows of young ages. Such women normally work, whereas married women normally do not work. Thus, the effect of heavy battle casualties will be to reduce the number of male workers and increase the number of female earners. The net reductions of the labor force would be much smaller than the number of battle casualties.

Reconversion and Expansion of Civilian Production

The rate at which reconversion and expansion of civilian production will proceed, as well as the levels that will be reached at any given date, can obviously not be predicted with assurance. Reconversion in the broad sense not only involves the retooling of plants, which probably need not require more than 6 months under favorable circumstances in any of the main industries affected and in most industries will require much less time than that, but also involves the reassembling of materials and skilled labor, the rescheduling of production, and the rebuilding of distributive organizations.

It can probably be said with assurance that, as far as purely physical limitations are concerned, our economy could reconvert and reach full-employment levels of peacetime production within 12 to 18 months after the end of the war, even assuming that the war ended simultaneously in both theaters without any tapering-off of war production before final cessation of hostilities. It follows that there is no purely physical reason why full employment on a peacetime basis should not be achieved in a still shorter period if considerable reconversion takes place during the Asiatic phase of the war, following a prior defeat of Germany. By way of illustration, a reduction of 50 percent in munitions production in the Asiatic phase of the war, coupled with a simultaneous demobilization of, say, 3 million from the armed forces, might make it physically possible to reach full civilian production and employment in less than a year after the defeat of Japan.

It is clear, however, that the actual rate of reconversion and resumption of civilian production will be determined not solely by physical limitations but also by considerations growing out of and in turn affecting the general economic climate or environment, such as the policies adopted by the Government and the expectations and actions of industry. Thus, it is impossible to say that full peacetime employment will have been reached as of any specified date. Though it is probable that 1940 levels of production will be exceeded in a post-war year such as 1946 or 1947, even this cannot be said to be a certainty. If 1940 levels are not exceeded, the larger labor force and increased productivity of the post-war period will raise unemployment above the 1940 volume, which was 9.3 million in July and averaged 8.1 million for that year. However, the accumulation of deferred demand and liquid savings and the reduction of private indebtedness during the war create so strong a presumption in favor of rapid expansion of our civilian economy, or at least of large segments of our economy such as construction and the industries manufacturing consumer durable goods, that it is doubtful that there will be anything like this amount of unemployment 2 years after the close of hostilities.

The problem is rather one of how much unemployment there will be during the transitional period and of how well demand will be sustained later. The first depends in large part upon the policies developed to settle the disposal of Government-owned war plants and surplus stocks of war goods, including equipment that will have to be moved out of the way to make room for other machinery, the speed of settlement of war-contract obligations, tax policies directly affecting business, and the adequacy of capital and credit facilities, including facilities available to small business units.

The immediate rate of reconversion, and even more the longer outlook, depends on other factors as well. The spending of war savings to satisfy deferred demands will depend partly upon the confidence which workers feel in the rate of recovery. If they hold their savings against the day they may become unemployed, it will seriously retard recovery. Business plans will also be affected, because if businessmen anticipate nothing more than a temporary boom, they are not likely to engage in as large a capital-investment program as would be necessary to meet the needs of a working population of 54 or 55 million people. Furthermore, the rate of capital investment is likely to depend on what action may be taken by the Federal Government to prevent the development of disruptive price inflation during the transitional period when purchasing power still remains in excess of goods. If inflation occurs and businessmen expect a later deflation, they will hesitate to invest in plants or equipment or to build houses for sale or rent. Again, one cannot forecast how well demand can be sustained past the first period of probable post-war boom, without some knowledge as to how income is to be distributed and what controls are to be invoked by the Federal Government to check monopolistic restrictions on production.

Post-War Employment in Relation to Timing Factors

The above analysis of reconversion and expansion of civilian production indicates some of the timing factors upon which the general level of employment as of any given post-war date will depend. That level, however, will also depend on the timing of military and industrial demobilization and, further, as far as the total of all jobs is concerned, on the development of public-works programs. After World War I, over 95 percent of our army was demobilized in 10 months. This included bringing nearly 2 million members of the A. E. F. home from overseas. Military demobilization at the end of the present war will no doubt require the transportation of a much larger force back from foreign areas, and some of these men will have to be carried much greater distances. However, we now have the shipping and air transport facilities to enable us to bring home more men in less time than in 1918–19 if considerations of policy do not dictate a more gradual demobilization. How rapidly our overseas force is brought back to the United States and how soon our whole armed force is reduced to its normal post-war level will therefore depend in large part on policy decisions taken after weighing on the one hand the strong desire of the men to be demobilized quickly and on the other hand the difficulties that may result from mustering men out of service before there are jobs available for them.

Industrial demobilization will presumably take place with great rapidity after hostilities have ceased, in view of the ample munitions stocks on hand and the need to clear the road for peace production. Here too, however, the outcome will to some slight extent at least be determined by general policy considerations, since the shipbuilding program may be cut back over a shorter or a longer period and since Government contracts in a limited number of other fields might be gradually tapered off in order to secure additional output for such purposes as foreign relief and rehabilitation.

Finally, the level of unemployment as of any given date will depend not only on the interaction of all these elements, but on the timing of withdrawals from the labor force as well. Seasonal factors, such as the relation of Armistice Day to the beginning of the normal school term, will probably have some effect in this connection. A number of persons who do not intend to remain in the labor force may delay formal withdrawal until they have obtained the unemployment-compensation benefits to which they are entitled; consequently, current unemployment records may slightly overstate the real unemployment problem in the early months of peace.

With respect to timing, two hypothetical situations need to be considered: (1) The simultaneous end of hostilities against Germany and Japan; (2) the end of hostilities against Germany 12 months or more before the war against Japan is concluded.

The original analyses of the problem, carried through by the Bureau of Labor Statistics, were made on the assumption that the military economic effort would be sustained to the end, either because the United States was at war with both belligerents or because it chose to maintain maximum pressure against the remaining belligerent. Under these conditions it was impossible to visualize any other than a period of serious transitional unemployment, reaching maximum intensity 6 to 9 months after the end of hostilities. The maximum number unemployed at any one time might not have been greater than in the latter part of 1940, say 7 million, and might have been as much as 12 million or so. Which was the more probable no one could say without knowledge of certain timing factors. It was certain that it was technically impossible to reestablish civilian employment as rapidly as demobilization would have to take place. The Bureau attempted, therefore, not so much to estimate the volume of unemployment as to determine the points at which control could be exercised to keep down unemployment.

Today it appears probable that the war against Germany will end first and will result in a cut-back of production. This presents an entirely different problem from that raised by complete cessation of hostilities, for it opens the possibility of reducing war production gradually. After hostilities cease entirely, it will not be possible to taper off any substantial part of war production. Obstacles to such a gradual reduction exist even if hostilities are continuing on a large scale in some theater, but one can at least explore the possibility of—

1. Estimating total needed matériel;
2. Determining which types of war matériel can be produced in advance of need, without undue danger of loss through spoilage and obsolescence;
3. Scheduling total munitions production at something like peak volume for the first month, tapering rapidly to the necessary average monthly production, and finally drawing goods from accumulated stores.

To date we do not have enough information from military authorities and the War Production Board to determine what is in fact likely to happen, nor is it known whether a production program such as is indicated is consistent with the uncertainties that attend the making of war plans. We will never know exactly how long the war is going to last, or exactly how much force has to be brought to bear against the enemy. Thus, any tapering scheme would presuppose that the industrial machine was left in condition to pick up munitions production almost overnight, in the event that original forecasts underestimated Japanese strength. In any event our object should certainly be to seek to reduce wartime dislocations to a minimum before the end of the war with Japan.

No estimate at all can be made of the probable volume of unemployment during the period of a war with Japan alone. Locally severe unemployment will be experienced in some centers when war contracts are terminated. The problem in this period is likely to be that of getting people out of congested war centers and into employment in nonwar industries and perhaps in other places, rather than that of large-scale, Nation-wide unemployment. It would probably be a mistake to try to avoid local unemployment of the sort forecast, because it is precisely during this period that the best opportunity is offered of avoiding the development of what will, after the war, become stranded areas. We do not know how quickly people will be willing to move to places where jobs do exist.

"Gross" and "Net" Labor Turnover

To the extent that these comments throw light on the number of persons who will be mustered out of the armed services or dismissed from war industry, and who then will not wish to withdraw from the labor force but rather will wish to find new employment, they provide a basis for calculating the "net" number of job transfers, or at any rate of job applications, that will result from the demobilization process. The actual amount of labor turnover, however, will be very much greater than is indicated by calculating "net" contractions and expansions in major components of the labor force on a broad national basis. Available statistics of past and current rates of labor turnover in selected industries provide no real clue to the extent to which interplant transfers within a given industry and transfers that cancel out between industries will increase the "gross" turnover after the war, because the statistical record is incomplete and because the situation in the demobilization period will in any case be without precedent. But, although precise measurement is impossible, it can be safely assumed that the total or "gross" number of job applications and job transfers will be several times as large as the "net" turnover, particularly in view of the tremendous local and interstate population movements that can be expected, following those which have occurred in response to the demands of war.

Suppose for instance, a private comes out of the Army and gets his former job back in an automobile company in Detroit, replacing an older civilian without job seniority who moved to Detroit, after the attack on Pearl Harbor, to work on tank assemblies. The latter goes home to Grand Rapids and, after some difficulty, obtains a job with a company making furniture—which displaces a woman worker, who then applies for a job as a teacher. Shortly afterward, however, the civilian decides to leave Grand Rapids and become a salesman for a household-equipment company whose head office is in Los Angeles. Meanwhile an ex-teacher and an ex-salesman may be taking jobs with a furniture manufacturer in New York. This is the kind of thing that will obviously be happening all over the country.

It may therefore be emphasized, in conclusion, that an enormous load will be thrown on the U. S. Employment Service in the near future—a load not adequately measured in terms of expected military and industrial contractions, large as the latter magnitudes loom in themselves. It is impossible to contemplate this prospect without coming to the conclusion that, whatever other policy decisions are reached by the Congress with respect to the solution of demobilization problems, the welfare and happiness of the American people will be greatly promoted if steps are taken to strengthen the U. S. Employment Service before demobilization is upon us.

U. S. GOVERNMENT PRINTING OFFICE: 1944

Serial No. R. 1599

[From the MONTHLY LABOR REVIEW (December 1943) of the Bureau of Labor Statistics, United States Department of Labor]

Labor Reserves Among Women, July 1943[1]

ESTIMATES prepared by the Bureau of Labor Statistics and the War Manpower Commission indicate that a net increase, in the total labor force, of about 1½ million persons will be needed between July 1943 and July 1944 in order to meet war production goals and the requirements of the armed services. Aside from persons who may be expected to enter the labor force as a result of normal population growth, the potential labor supply of the United States available to meet these requirements is now concentrated among women engaged in their own home housework. Out of a total of about 29 million women in this category in July 1943, there were about 11 millions who were in the group which may be considered most available for labor market participation, i. e., women who reside in nonfarm areas (and are, therefore, more likely to be near centers of industrial activity) and who also do not have any children under 14 in the household. A little over 3½ million of these women were under 45 years of age—and it is from this group that most of the additional workers will have to come.

Information on the characteristics of the potential labor reserve among women has been made available from a special tabulation prepared by the Bureau of the Census on the basis of its sample Monthly Report on the Labor Force. A detailed classification of women engaged in their own home housework in July 1943 showing age, farm and nonfarm residence, and presence of children under 14 in the household is presented in chart 1.

It should be pointed out that the term "engaged in own home housework" is applied to any woman who gives as her reason for not actively seeking work the fact that she was "primarily occupied with housework in her own home." Since there is no limitation on the number of homemakers in any one home, there are cases where two women report themselves as homemakers within a single household. As a matter of fact, the tendency toward more than one homemaker in the household is accentuated during the summer months, when a large number of girls on summer vacation from school report themselves as homemakers. Aside from this seasonal factor, there has also been the effect of "doubling up" arising out of the movement of servicemen's wives back to the parents' household—a factor which will increase in importance with the drafting of fathers.

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[1] Prepared in the Bureau's Occupational Outlook Division by Seymour L. Wolfbein, with the cooperation of the Bureau of the Census.

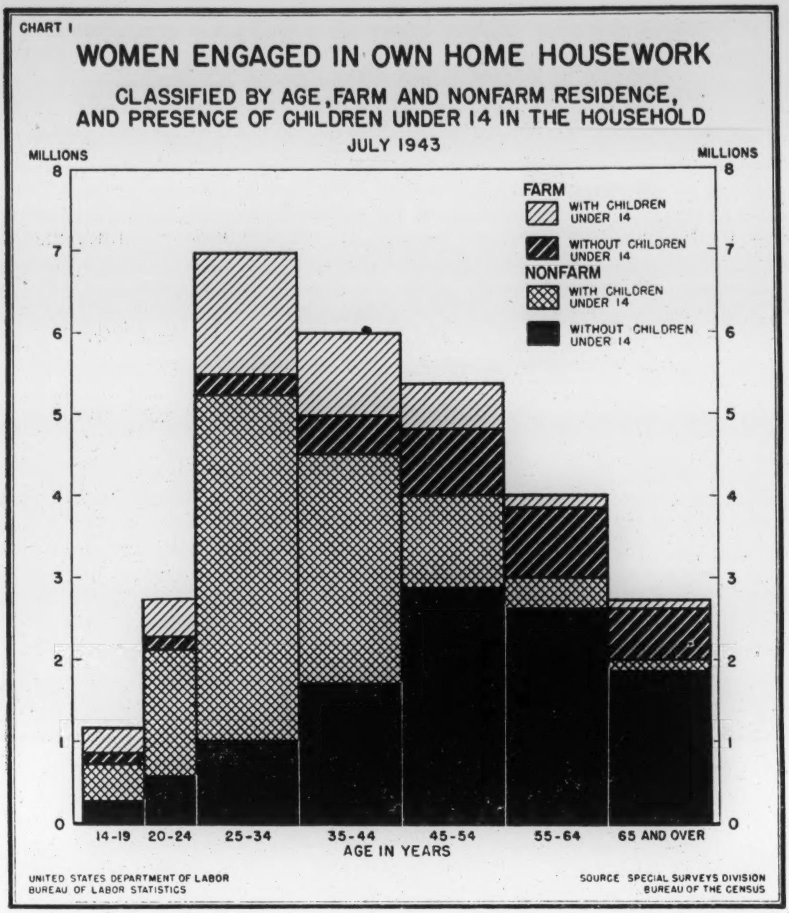

CHART I

WOMEN ENGAGED IN OWN HOME HOUSEWORK

CLASSIFIED BY AGE, FARM AND NONFARM RESIDENCE, AND PRESENCE OF CHILDREN UNDER 14 IN THE HOUSEHOLD

JULY 1943

UNITED STATES DEPARTMENT OF LABOR
BUREAU OF LABOR STATISTICS

SOURCE SPECIAL SURVEYS DIVISION
BUREAU OF THE CENSUS

All of this must be kept in mind in interpreting the data classifying women engaged in their own home housework by presence of children under 14 in the household. It should be pointed out that women classified as having children under 14 in the household are not all necessarily responsible for the care of those children who, of course, may not even be their own. In July, for example, two-thirds of the homemakers 14–19 years of age were classified as having children under 14 in the household. The classification by presence of children is also less meaningful for the older age groups. The survey showed that in July 1943 there were almost a million homemakers 55 years and over with children under 14 in the household. Obviously few of this group were mothers of those children.

Effect of Dependency Status on Labor-Market Participation

The extent to which the presence of children under 14 in the household affects labor-market participation among women is shown in the accompanying table and in chart 2. The worker rate among nonfarm women 20–54 years of age without children under 14 in the household was double that of the corresponding group with children under 14 in July 1943. Women without children under 14 had a worker rate twice that of women with children in the age groups 20–24 and 35–44. Among those 25–34 years of age (where dependency status is most meaningful because most of the children under 14 are to be found among women in this age group and the presence of children under 14 in the household more nearly reflects actual responsibility for their care) the proportion of women in the labor force without children was three times as high as that for women with children under 14 in the household.

Differences in worker rates on the basis of dependency status were not so marked among the women residing in farm areas. The sharpest difference (as was the case among nonfarm workers) was among those 25–34 years, where the worker rate for women without children under 14 was double that for women with children.[3]

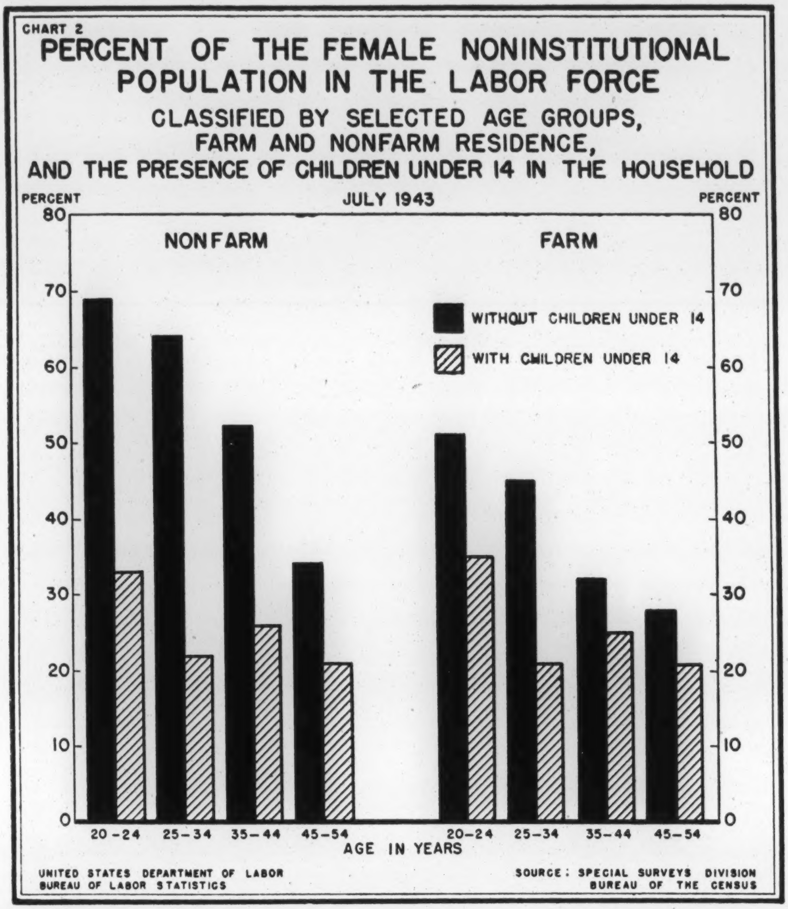

CHART 2

PERCENT OF THE FEMALE NONINSTITUTIONAL POPULATION IN THE LABOR FORCE

CLASSIFIED BY SELECTED AGE GROUPS, FARM AND NONFARM RESIDENCE, AND THE PRESENCE OF CHILDREN UNDER 14 IN THE HOUSEHOLD

JULY 1943

UNITED STATES DEPARTMENT OF LABOR
BUREAU OF LABOR STATISTICS

SOURCE: SPECIAL SURVEYS DIVISION
BUREAU OF THE CENSUS

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[3] These labor-force differences are minimized in the sense that more refined data contrasting worker rates among women actually responsible for the care of children and those who do not have that responsibility would show wider differences in labor-market rates.

Percent of Female Noninstitutional Population 20–54 Years of Age in Civilian Labor Force, by Residence and Presence of Children Under 14 in Household, July 1943 [1]

Age	All women			Women residing in—					
				Farm areas			Nonfarm areas		
	Total	With children under 14	Without children under 14	Total	With children under 14	Without children under 14	Total	With children under 14	Without children under 14
Total, 20–54 years	37	25	49	29	25	35	39	25	52
20–24 years	49	34	66	41	35	51	51	33	69
25–34 years	35	22	61	26	21	45	37	22	64
35–44 years	36	26	49	28	25	32	39	26	52
45–54 years	29	21	32	25	21	28	31	21	34

[1] From unpublished data of Special Surveys Division, Bureau of the Census.

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Serial No. R. 1598

[From the MONTHLY LABOR REVIEW (December 1943) of the Bureau of Labor Statistics, United States Department of Labor]

Manpower Requirements in 1944[1]

Summary

A REAPPRAISAL of manpower needs for the coming year on the basis of recently revised estimates of munitions production indicates that requirements will not be so high as was previously anticipated. The principal needs for additional personnel are seen in the munitions industries, which will need 1,100,000 more workers in mid-1944 than were employed in July 1943, and in the armed forces, which will increase by 2,000,000 in net strength over the same period. About half of the net requirements may be met by workers shifting from other employment, where labor requirements will be reduced; the other half will be supplied by nonworkers entering the labor force. That this further expansion of the labor force is within reach of fulfillment is suggested by the 4,000,000 increase which occurred from July 1942 to July 1943, and is confirmed by examination of remaining labor reserves.

Although the supply of workers in the Nation as a whole is expected to be more than adequate to meet anticipated needs, there may be serious difficulties in attaining required levels of employment in munitions plants situated in areas of labor shortage.

Estimates of Labor Requirements

A general description of the nature of the estimates of labor requirements, and of the production-program information and other assumptions upon which they are based, as well as the qualifications which should be considered in interpreting them was presented in a previous article[2] embodying estimates released by the Bureau of Labor Statistics and the War Manpower Commission on June 28, 1943.

ARMED FORCES

The greatest single demand for manpower over the year is that of the armed forces. No changes are indicated from previous estimates of an increase of 2,000,000 in the net strength of the armed services. Since this estimate is net, it does not take account of replacements for casualties and discharges. In terms of the number who will have to be inducted into the services, this estimate must be considered a minimum.

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[1] Prepared in the Bureau's Occupational Outlook Division on the basis of a joint statement by the Bureau of Labor Statistics and the War Manpower Commission.

[2] Monthly Labor Review, August 1943, (pp. 204-211): Manpower Requirements for 1943-1944.

MUNITIONS INDUSTRIES

Labor requirements of the munitions industries—which include principally the metal-using industries, metal mining, and selected chemicals and rubber industries—are now estimated at nearly a million less in July 1944 than were previously anticipated. The estimates published jointly by the Bureau of Labor Statistics and the War Manpower Commission in June 1943 were based upon the War Production Board's current summary of official munitions output and war construction schedules for 1944. Since then, the War Production Board has estimated that a somewhat lower level of munitions production may more reasonably be expected in 1944. Among the reasons given for the belief that "we are approaching our production ceiling" are the recent diminution in the monthly rate of increase of munitions production, anticipated cut-backs in the programs for some items for which requirements are reduced by the changing military situation, and the fact that schedules for some types of equipment had been set at ambitiously high levels which may be modified downward.

Based on a recent estimate by the War Production Board of the level of munitions production which may realistically be expected in 1944, with no substantial change in the assumptions as to output of civilian goods in the munitions industries, labor requirements in these industries are estimated to be 10.7 millions in July 1944 as compared with the previous estimate, based upon the official munitions production schedules, of 11.6 millions. The net additional requirements from July 1943 to July 1944 are therefore reduced from 2.0 million to 1.1 million in the present estimate.

OTHER EMPLOYMENT

Employment in the war agencies of the Federal Government—principally in the War and Navy Departments (excluding manufacturing activities) and the emergency agencies—is now expected to continue at current levels. It was previously anticipated, on the basis of official statements, that 300,000 additional employees would be needed.

The labor requirements of other civilian industries in July 1944 are currently estimated at about the same levels as previously indicated. Moderate increases are expected in labor needs in food, transportation, fuel, and utilities; textiles, apparel, and leather will need about the same number of workers as in July 1943; construction will release large numbers of employees, with a smaller proportionate cut in the industries making construction materials; and a moderate decline is expected in the "other manufacturing industries" group, which includes principally tobacco, paper and allied products, printing and publishing, and furniture and finished lumber products.

The only other changes in the estimates of present manpower requirements are substantial revisions in the expectations for the nonindustrial segments--trade, service, State and local government, Federal Government (other than war agencies, requirements for which are shown separately), and self-employed, proprietors, and domestic servants. The estimates now suggest a moderate decline in these branches of employment, rather than the substantial decrease indicated in the earlier estimates. With respect to such activities, for which there is no programming on a national scale, the present estimates reflect not requirements, but rather, expectations of probable levels of employment. Although in some war production communities additional workers are needed in these activities, the manpower so employed in the country as a whole could be curtailed considerably, if necessary. The reduced munitions labor requirements, however, and the elasticity with which the labor force has already expanded indicate that declines of the magnitude previously considered necessary are not likely to occur. Because these activities are widely distributed over the country and can more readily utilize the skills of persons remaining in the Nation's labor reserves, it appears possible for nonindustrial employers to maintain their work force only slightly below the levels of July 1943 without impeding the necessary expansion of munitions employment and of the armed forces.

In summary, the needs for additional labor from July 1943 to July 1944 are shown in the accompanying statement:

	Number
Total	3, 300, 000
Armed forces	2, 000, 000
Munitions and munitions-material industries	1, 100, 000
Transportation, fuel, and utilities	100, 000
Food industries	100, 000

Declines totaling 1,500,000 are indicated in labor requirements in other segments of employment, as follows: Construction and building materials (800,000), nonindustrial employment (600,000), and the "other manufacturing" group (100,000). Nearly half of the net additional requirements can be met if all the workers released from these industries find their places in the expanding segments. Many construction workers have the types of skills adaptable to war production, and are accustomed to migrate to the available jobs. Many nonindustrial employees, on the other hand, will require retraining before they can be absorbed in the expanding industries.

The remainder of the requirements will have to be met by the entry of nonworkers into the labor force. The unemployed can no longer be depended upon as a source of labor for expansion of the working population. The number of unemployed has fluctuated around 1,000,000 through 1943. (Unemployment was estimated at 600,000 in November.) Because of between-job shifts resulting from changes in production schedules and other causes, it is assumed that unemployment will continue to fluctuate at approximately this level, with possibly some seasonal increase in the summer as students temporarily go into the labor market. Assuming the 1944 seasonal peaks in both unemployment and agriculture to be somewhat lower than in 1943, the number of new workers needed in the labor force in July 1944 to meet total requirements will be 1,500,000.

Sources of Labor Supply

The labor force has grown phenomenally during the last 2 years. The increase in the year ending July 1941 (900,000) was only a little more than normal. However, the labor force increased by

2,300,000 in the next year, and by 4,200,000 in the year ending July 1943. Because of the decrease which took place in unemployment, the number of persons at work or in the armed forces increased even more—4,500,000 in the first year, 5,200,000 in the second, and 5,800,000 in the third—a total of 15,500,000. In other words, during the first year of the defense program expansion of employment came almost exclusively from a reduction of unemployment and during the next year about half of it, but in the third year our primary dependence was upon new workers.

As would be expected, women and school girls represented the greater part of these additions to the labor force. Of the 7,400,000 persons entering the labor force in the 3 years, 4,000,000 were women. Since the annual net increase in the labor force resulting from population growth is about half a million men and women, the addition of 1,500,000 persons to meet manpower needs would require the entrance of about a million additional persons most of whom would have to be women. That this is feasible is confirmed by an examination of the remaining labor reserves among women.

Although the manpower resources of the country as a whole appear to be ample to meet essential requirements, many of the persons available for work live in localities far from the jobs which have to be filled. The most difficult problems in manpower mobilization in the coming year will center in a limited number of areas where the labor demands of expanding war plants, together with the needs of consumer services which are strained to supply a rapidly increasing local population, have created serious shortages of labor. Those industries on which fall the heaviest burdens of further expansion in munitions output—aircraft and shipbuilding—are perhaps most affected by such labor shortages. Nearly seven-eighths of the workers in aircraft assembly plants and the same proportion of the shipbuilding workers in July 1943 were employed in areas currently experiencing labor shortages or areas in which shortages were expected in the near future. Furthermore, eight-tenths of the additional workers required in aircraft plants to raise production to program levels, and nine-tenths of the additional shipbuilding workers will have to be hired by plants in labor-shortage areas.

The problems of meeting the labor requirements of these areas are complicated by shortages of housing and local community services. With influx of additional workers limited by these factors, it becomes necessary to rely chiefly upon the persons already living in the areas. Channeling of workers into the jobs in which their skills are most needed, recruitment of nonworkers into the labor force, reducing unnecessary turnover, and the promotion of efficient utilization of labor already employed are the principal means by which this problem can be approached through manpower controls. The cooperation of other agencies of the Government has to be sought in those situations where the production load on a community proves to be greater than its available manpower can handle.

Distribution of the Labor Force, July 1940 to July 1943, and Labor Requirements July 1944 [1]

Item	Number of persons (in millions)				
	July 1940	July 1941	July 1942	July 1943	July 1944 [2]
Total labor force, including armed forces	57.4	58.3	60.6	64.8	66.3
Armed forces [3]	.5	1.7	3.8	9.3	11.3
Civilian labor force	56.9	56.6	56.8	55.5	55.0
Unemployed	9.3	5.7	2.8	1.2	1.0
Employed	47.6	50.9	54.0	54.3	54.0
Agriculture	10.8	10.7	11.7	12.1	12.0
Nonagricultural employment	36.8	40.2	42.3	42.2	42.0
Munitions and munitions-materials industries [4]	4.1	5.9	7.8	9.6	10.7
Transportation, fuel and utilities [5]	3.9	4.2	4.3	4.4	4.5
Federal war agencies [6]	.1	.3	1.0	1.6	1.6
Construction and building materials [7]	2.5	3.1	3.1	2.1	1.3
Food [8]	1.3	1.4	1.4	1.4	1.5
Textiles, clothing and leather [9]	2.4	2.9	2.8	2.7	2.7
Other manufacturing [10]	2.0	2.2	2.2	2.2	2.1
Nonindustrial employment [11]	20.5	20.2	19.7	18.2	17.6

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[1] Sources: July 1940 to July 1943 data for civilian labor force, unemployed, employed, agricultural and nonagricultural employment, from Monthly Report on the Labor Force, Bureau of the Census. July 1940 to July 1943 data for components of nonagricultural employment from Bureau of Labor Statistics. Data on armed forces from published statements. Estimates for July 1944, except armed forces, by Bureau of Labor Statistics and War Manpower Commission, Reports and Analysis Service, with the cooperation of the Planning Division of the War Production Board. All data apply to approximately the tenth day of the month, except the armed-forces figures which relate to the first day of the month.

[2] Estimated.

[3] Net strength. Excludes net attrition resulting from battle casualties or other causes.

[4] Includes all metal-using industries, metal mining, coke-oven products, abrasives, selected chemicals, and rubber industries.

[5] Includes transportation and public utilities, coal mining, and petroleum production, drilling and refining.

[6] Excludes navy yards and manufacturing arsenals included in munitions group, as well as off-continent and force-account construction employment of war agencies.

[7] Includes contract construction, Federal force-account construction, lumber, quarrying, asphalt products, paint and varnishes, and building materials in the stone, clay, and glass group.

[8] Includes food manufacturing and tin cans.

[9] Includes textiles, apparel, leather, rayon and allied products, and rubber boots and shoes.

[10] Includes tobacco, paper and allied products, printing and publishing, furniture and finished lumber products, and parts of the chemicals, stone, clay, and glass, and miscellaneous manufacturing groups.

[11] Includes trade, service, State and local government, Federal Government except war agencies, self employed, proprietors, and domestic servants.

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Wartime Employment of Women in Manufacturing[1]

WARTIME industrial expansion has resulted in almost doubling the number of women in manufacturing industries since October 1939, bringing the total number of women employed in June 1943 to more than 4¼ million. Women now comprise about 30 percent of all manufacturing wage earners. Field studies conducted by the Women's Bureau of the U. S. Department of Labor indicate that although many of the women hired have had no previous factory experience, they are well suited to many kinds of industrial work and are superior to men at certain tasks, particularly those which require dexterity and attention to details. The metal, industrial chemicals, and rubber industries have been especially active in recruiting women. These industries which produce the ships, planes, and implements of war employed nearly 2 million woman wage earners in June 1943, while the textile, leather, and apparel industries which have always utilized women in great numbers employed almost 1½ million.

TABLE 1.—*Estimated Employment of Woman Wage Earners in Manufacturing, by Economic Division,*[1] *January and June 1943*

Economic division	Woman wage earners				All wage earners (thousands)	
	Number (thousands)		Percent of total[2]			
	January	June	January	June	January	June
All manufacturing	3, 766	4, 276	27. 9	30. 9	13, 503	13, 821
Metal, industrial chemicals, and rubber industries	1, 438	1, 859	19. 4	23. 7	7, 422	7, 858
Basic metals	59	94	5. 6	8. 9	1, 048	1, 049
Metal fabricating	1, 292	1, 668	21. 7	26. 1	5, 965	6, 391
Industrial chemicals	21	26	9. 4	11. 1	226	229
Rubber	66	71	36. 1	37. 8	183	189
Food industries	248	262	25. 7	27. 5	965	953
Textile, apparel, and leather industries	1, 473	1, 455	58. 5	60. 2	2, 518	2, 416
Other manufacturing industries	607	700	23. 4	27. 0	2, 598	2, 594

[1] These divisions were devised to distinguish groups of industries of special significance in wartime. They represent combinations of complete industries classified by pre-war product and cannot be considered clear-cut categories.

[2] Percentages computed on unrounded figures.

During the initial stages of war expansion the manufacturing industries hired men preponderantly. Between October 1939 and April 1942, 5 million wage earners were added to manufacturing industries; less than 10 percent of these were women. As long as a supply of men was still available many industries were reluctant to hire women. Traditionally women had been utilized only in lower-paying jobs. The industries which had large proportions of women were, for the most part, highly seasonal and therefore offered very irregular employment. An entirely new concept of the jobs which women could fill was necessary before they could be used to their fullest capabilities. The growing depletion of the male labor supply and the rapidly expanding war industries literally forced employers to try out women in all industries and almost all jobs, between April 1942 and June 1943. Thus, women represented more than four-fifths of the net total of 1,833,000 wage earners added to the manufacturing industries between April 1942 and June 1943.

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[1] Prepared in the Bureau's Employment Statistics Division.

TABLE 2.—*Estimated Employment of Woman Wage Earners in Manufacturing, in Specified Months, October 1939–June 1943*

Year and month	Woman wage earners		Man wage earners (thousands)	All wage earners (thousands)
	Number (thousands)	Percent of total		
1939: October	2, 268	[1] 25. 6	6, 586	8, 854
1940: October	2, 270	24. 1	7, 134	9, 404
1941: April	2, 425	23. 5	7, 885	10, 310
October	2, 743	23. 6	8, 873	11, 616
1942: April	2, 751	22. 9	9, 237	11, 988
October	3, 336	25. 3	9, 830	13, 166
1943: January	3, 766	27. 9	9, 737	13, 503
February	3, 915	28. 7	9, 718	13, 633
March	4, 015	29. 2	9, 712	13, 727
April	4, 112	29. 9	9, 623	13, 735
May	4, 172	30. 5	9, 524	13, 696
June	4, 276	30. 9	9, 545	13, 821

[1] Derived from data of the 1939 Census of Manufactures: "Persons Employed in Manufacturing Establishments, by Sex," August 1941.

Before the war 85 percent of all woman wage earners in manufacturing were in the nondurable-goods industries. However, the rapid wartime growth of the durable-goods industries relative to the nondurable resulted in more nearly equalizing the distribution of women in these two groups. By June 1943, 58 percent of all woman wage earners were in the nondurable-goods industries, while 42 percent were in those making durable goods.

The number of men in the durable-goods industries continued to increase until March 1943, even though male employment in nondurable-goods industries began to decline in October 1942. Undoubtedly the drop in male employment in the nondurable-goods industries was in large part due to the shifting of workers to jobs in essential war industries. However, the increase in male employment in the manufacture of durable goods in this period (October 1942 to March 1943) was greater than the decrease in their employment in nondurable-goods industries, indicating that some men came from the farms, older men came out of retirement, and youths left schools.

Since March 1943 the number of men in both the durable- and nondurable-goods industries has been declining. Fortunately the number of women entering manufacturing industries was more than sufficient to replace the men leaving for the armed forces. For this reason total manufacturing employment has continued to increase to a level of almost 14 million.

Each of the major durable-goods groups showed substantial increases in the number of women hired. Most spectacular of these was

Table 3.—*Estimated Employment of Woman Wage Earners in Durable and Nondurable Goods Manufacturing, in Specified Months, October 1939–June 1943*

Year and month	Woman wage earners				Man wage earners (thousands)		All wage earners (thousands)	
	Number (thousands)		Percent of total					
	Durable goods	Nondurable goods	Durable goods	Nondurable goods	Durable goods	Nondurable goods	Durable goods	Nondurable goods
1939: October	340	1,928	[1] 8.6	[1] 39.5	3,627	2,959	3,967	4,887
1940: October	381	1,889	8.4	38.7	4,144	2,990	4,525	4,879
1941: April	445	1,980	8.5	39.1	4,798	3,087	5,243	5,067
October	517	2,226	8.6	39.9	5,518	3,355	6,035	5,581
1942: April	577	2,174	8.9	39.6	5,923	3,314	6,500	5,488
October	982	2,354	13.2	41.3	6,482	3,348	7,464	5,702
1943: January	1,382	2,384	17.6	42.4	6,493	3,244	7,875	5,628
February	1,494	2,421	18.7	43.0	6,504	3,214	7,998	5,635
March	1,573	2,442	19.4	43.4	6,526	3,186	8,099	5,628
April	1,656	2,456	20.3	43.9	6,489	3,134	8,145	5,590
May	1,727	2,445	21.2	44.2	6,432	3,092	8,159	5,537
June	1,814	2,462	22.0	44.2	6,436	3,109	8,250	5,571

[1] Derived from data of the 1939 Census of Manufactures: "Persons Employed in Manufacturing Establishments, by Sex," August 1941.

the transportation-equipment group, which employed only 1,800 women in October 1939 and employed more than 466,800 in June 1943. In the latter month women accounted for more than 20 percent of the total number of wage earners in this group, as compared with only 1 percent in October 1939.

Table 4.—*Estimated Number of Woman Wage Earners, by Major Industry Groups, in Specified Months, October 1939–June 1943*

Industry group	Number (in thousands)				
	1939	1941	1942	1943	
	October	April	April	April	June
Durable goods:					
Iron and steel	68.8	93.2	124.3	293.9	317.8
Electrical machinery	100.3	131.2	174.2	313.4	323.6
Machinery, except electrical	28.4	43.0	62.0	218.9	240.2
Transportation equipment	1.8	4.3	33.1	410.9	466.8
Automobiles	29.5	31.6	20.5	118.2	142.0
Nonferrous metals	34.9	55.4	56.6	83.4	91.7
Lumber and timber	4.1	8.0	11.6	49.9	53.0
Furniture	36.9	31.6	39.9	82.8	89.9
Stone, clay, and glass	35.3	46.6	55.2	84.7	89.3
Nondurable goods:					
Textile-mill products	527.7	554.9	587.7	627.0	620.2
Apparel	626.0	687.9	729.6	696.1	669.8
Leather	139.6	149.9	161.1	169.2	164.5
Food	263.8	177.4	211.6	245.7	262.1
Tobacco	64.9	61.2	62.1	63.0	60.3
Paper	69.4	71.4	78.1	96.1	100.2
Printing and publishing	59.3	69.6	71.4	88.1	92.2
Chemicals	46.0	59.3	102.4	219.5	231.2
Petroleum and coal	.3	.5	.8	5.9	6.9
Rubber	33.0	42.0	39.9	68.3	71.4
Miscellaneous	98.1	105.5	129.1	176.9	182.7

The extent to which certain industries employed women is best illustrated by the fact that 8 industries employed more than 100,000 women each in June 1943. These are aircraft, automobiles, boots and shoes, cotton goods, electrical equipment, machine-shop products, men's clothing, and women's clothing. An additional 10 industries employed more than 50,000 women. Further proof of the widespread utilization of women in manufacturing may be seen in the fact that in 30 industries women represent more than half of the total employment, while in only 6 do they account for less than 5 percent. In October 1939 women constituted less than 5 percent of the employment in 42 industries.

Table 5.—*Number of Women per 100 Wage Earners in Manufacturing Industries and Groups in Specified Months, October 1939 to June 1943*

Industry group or industry	1939 October [1]	1941 April	1942 April	1943	
				April	June
All manufacturing	25.6	23.5	22.9	29.9	30.9
Durable goods	8.6	8.5	8.9	20.3	22.0
Nondurable goods	39.5	39.1	39.6	43.9	44.2
Iron and steel and their products	6.2	6.8	7.9	17.0	18.5
Blast furnaces, steel works, and rolling mills	1	1	1	5	6
Gray-iron and semisteel castings	1	(3)	(3)	6	7
Malleable-iron castings	4	(3)	(3)	8	9
Steel castings	(2)	(2)	(2)	6	7
Cast-iron pipe and fittings	(2)	(2)	(2)	2	2
Tin cans and other tinware	28	30	31	39	41
Wire drawn from purchased rods	11	9	9	19	23
Wirework	22	21	20	28	31
Cutlery and edge tools	28	21	26	31	32
Tools (except edge tools, machine tools, files, and saws)	11	10	10	20	20
Hardware	23	27	28	35	36
Plumbers' supplies	5	5	6	18	19
Stoves, oil burners, and heating equipment, not elsewhere classified	3	4	5	25	25
Steam and hot-water heating apparatus and steam fittings	6	7	8	22	25
Stamped and enameled ware and galvanizing	23	21	22	34	36
Fabricated structural and ornamental metalwork	(2)	(2)	1	7	7
Bolts, nuts, washers, and rivets	14	13	15	26	29
Forgings, iron and steel	(2)	1	(2)	11	12
Screw-machine products and wood screws	12	14	24	32	35
Steel barrels, kegs, and drums	11	(3)	(3)	23	28
Firearms	5	3	8	24	27
Electrical machinery	33.9	31.9	33.5	45.1	46.1
Electrical equipment	17	24	26	39	40
Communication equipment	58	55	56	59	59
Machinery, except electrical	5.2	5.2	5.9	17.7	19.2
Machinery and machine-shop products	4	5	6	19	21
Engines and turbines	2	1	1	12	14
Tractors	1	(2)	(2)	8	12
Agricultural machinery, excluding tractors	1	1	1	7	12
Machine tools	(2)	1	2	12	13
Machine-tool accessories	3	5	6	20	20
Textile machinery	4	4	5	17	18
Pumps and pumping equipment	6	3	4	12	13
Typewriters	[4] 32	35	35	39	39
Cash registers, adding and calculating machines	[4] 16	20	21	32	34
Washing machines, wringers, and driers, domestic	4	6	9	31	36
Sewing machines, domestic and industrial	12	13	16	29	30
Refrigerators and refrigeration equipment	9	10	10	26	26
Transportation equipment, except automobiles	1.0	.9	2.7	18.5	20.4
Locomotives	1	(2)	(2)	2	3
Car building, electric and steam railroad	1	(2)	1	6	9
Aircraft and parts, excluding aircraft engines	[4] 1	1	6	37	39
Aircraft engines	[4] 1	1	4	27	28
Shipbuilding	(2)	(2)	(2)	6	8
Motorcycles, bicycles, and parts	10	16	17	25	27
Automobiles	6.6	5.4	4.8	18.1	21.0
Nonferrous metals and their products	13.7	16.6	15.3	20.3	22.1
Smelting and refining, primary, of nonferrous metals	(2)	(2)	(2)	2	2
Alloying and rolling and drawing of nonferrous metals, except aluminum	7	9	10	17	18
Clocks and watches	48	47	48	51	53
Silverware and plated ware	22	25	23	33	32
Lighting equipment	26	26	23	29	32
Aluminum	10	7	4	12	15

See footnotes at end of table.

TABLE 5.—*Number of Women per 100 Wage Earners in Manufacturing Industries and Groups in Specified Months, October 1939 to June 1943*—Continued

Industry group or industry	1939 October	1941 April	1942 April	1943	
				April	June
Lumber and timber basic products	0.9	1.6	2.1	10.4	11.0
Sawmills and logging camps	1	1	2	9	9
Planing and plywood mills	1	2	3	15	17
Furniture and finished lumber products	10.3	8.4	10.3	23.0	25.1
Mattresses and bedsprings	18	16	17	33	35
Furniture	6	7	8	22	25
Wooden boxes, other than cigar	8	7	9	23	26
Caskets and other morticians' goods	20	17	17	22	23
Wood preserving	(2)	(2)	(2)	3	3
Stone, clay, and glass products	11.1	13.1	14.6	23.6	24.8
Glass and glassware	18	18	20	30	31
Cement	(2)	(2)	(2)	2	3
Brick, tile, and terra cotta	3	5	5	7	9
Pottery and related products	32	32	37	43	43
Gypsum	(2)	(2)	(2)	11	11
Wallboard, plaster (except gypsum), and mineral wool	1	1	1	16	21
Lime	(2)	(2)	(2)	1	2
Abrasive wheels	16	14	14	37	38
Textile-mill products and other fiber manufactures	43.4	43.9	45.1	50.0	50.3
Cotton manufactures, except smallwares	38	39	40	45	45
Cotton smallwares	53	52	57	62	63
Silk and rayon goods	50	52	52	58	58
Woolen and worsted manufactures, except dyeing and finishing	41	42	42	47	47
Hosiery	61	60	62	67	68
Knitted cloth	38	46	45	51	51
Knitted outerwear and knitted gloves	76	74	78	80	79
Knitted underwear	76	74	74	78	78
Dyeing and finishing textiles, including woolen and worsted	17	18	21	28	29
Carpets and rugs, wool	31	30	30	37	38
Cordage and twine	33	31	32	43	44
Apparel and other finished textile products	74.0	76.1	76.6	78.3	78.8
Men's clothing, not elsewhere classified	66	68	69	72	73
Shirts, collars, and nightwear	88	86	88	89	89
Underwear and neckwear, men's	87	85	86	89	89
Work shirts	91	89	89	92	91
Women's clothing, not elsewhere classified	78	81	80	80	80
Corsets and allied garments	90	87	88	89	89
Millinery	69	70	68	71	68
Handkerchiefs	94	90	92	94	94
Housefurnishings, other than curtains, etc	64	62	61	74	75
Textile bags	66	63	68	73	70
Leather and leather products	40.0	40.2	41.7	48.9	49.4
Leather	9	9	9	16	17
Boot and shoe cut stock and findings	30	30	33	35	36
Boots and shoes	45	47	49	56	57
Leather gloves and mittens	61	64	65	72	72
Trunks and suitcases	30	31	39	51	52
Food	28.4	21.3	23.7	27.0	27.5
Slaughtering and meat packing	15	15	16	21	22
Condensed and evaporated milk	3	7	7	13	14
Ice cream	17	12	17	21	24
Flour	2	3	3	7	7
Cereal preparations	29	31	30	34	36
Baking	15	20	22	29	29
Sugar refining, cane	7	8	10	18	19
Sugar, beet	1	(2)	(2)	3	6
Confectionery	67	61	60	63	62
Malt liquors	1	1	1	7	9
Canning and preserving	56	40	42	43	42
Tobacco manufactures	66.9	66.5	66.8	67.7	67.8
Cigarettes	48	49	49	55	54
Cigars	80	79	80	80	81
Tobacco (chewing and smoking) and snuff	50	47	46	50	52
Paper and allied products	24.0	23.8	24.0	30.8	31.6
Paper and pulp	8	9	9	14	16
Paper goods, other	35	36	39	46	47
Envelopes	56	55	56	58	58
Paper bags	51	48	41	48	47
Paper boxes	41	38	39	46	47

See footnotes at end of table.

Table 5.—*Number of Women per 100 Wage Earners in Manufacturing Industries and Groups in Specified Months, October 1939 to June 1943*—Continued

Industry group or industry	1939 October	1941 April	1942 April	1943 April	1943 June
Printing, publishing, and allied products	17.8	20.7	21.6	26.7	27.6
Newspapers and periodicals	8	(3)	(3)	9	10
Printing, book and job	23	26	27	35	36
Lithographing	22	24	24	35	38
Bookbinding	42	42	43	51	51
Chemicals and allied products	14.7	15.0	17.8	29.5	31.2
Paints, varnishes, and colors	5	5	6	12	13
Drugs, medicines, and insecticides	42	46	47	56	56
Perfumes and cosmetics	69	62	66	69	67
Soap	17	17	16	23	23
Rayon and allied products	26	24	24	32	34
Chemicals, not elsewhere classified	3	4	4	10	10
Compressed and liquefied gases	1	(2)	(2)	5	5
Ammunition, small-arms	32	(3)	36	48	49
Cottonseed oil	1	(2)	2	3	5
Fertilizers	(2)	1	2	6	6
Products of petroleum and coal	.3	.4	.6	4.8	5.5
Petroleum refining	(2)	(2)	1	4	5
Roofing materials	1	1	1	8	13
Rubber products	24.6	27.8	28.1	36.7	37.8
Rubber tires and inner tubes	14	16	18	29	30
Rubber goods, other	28	31	30	40	42
Miscellaneous industries	36.6	34.7	35.7	43.9	44.9
Professional and scientific instruments and fire-control equipment	15	14	16	41	42
Photographic apparatus	26	22	22	35	35
Optical instruments and ophthalmic goods	33	30	32	42	42
Pianos, organs, and parts	10	13	11	23	24
Games, toys, and dolls	51	45	48	52	53

[1] Derived from data of the 1939 Census of Manufactures: "Persons Employed in Manufacturing Establishments, by Sex," August 1941.

[2] Less than 1.

[3] Not available.

[4] Derived from Census data by estimation.

In the preceding tables sex-ratio data are shown for 132 industries from October 1939 to June 1943. Ratios for October 1939 are derived from the 1939 Census of Manufactures release, "Persons Employed in Manufacturing Establishments, by Sex." Data from October 1940 through June 1943 are based upon reports to the Bureau of Labor Statistics from manufacturing establishments. For June 1943, reports were received from approximately 23,000 establishments, employing more than 8 million wage earners. This number represents about three-fourths of the establishments which report employment each month and constitutes more than four-fifths of the wage earners in the complete sample.

Each series published is based on a sample covering at least one-fifth of the estimated wage-earner employment for the entire industry. Half the series are based on samples covering 60 percent or more of the estimated wage-earner employment; 10 percent on samples greater than 90 percent.

U. S. GOVERNMENT PRINTING OFFICE: 1943

Serial No. R. 1549

[From the MONTHLY LABOR REVIEW (July 1943) of the Bureau of Labor Statistics, United States Department of Labor]

Relative Severity of Post-War Demobilization by States[1]

THE relative severity of the post-war demobilization problem for each State may be said to depend upon the size of its "excess" labor supply. during the reconversion period, in relation to its pre-war capacity to provide employment. It may therefore be measured by the ratio of the total number of demobilized persons in the State to the employment in 1940. The group of demobilized persons will include members of the armed services who may be expected to return to the State, as well as industrial workers within its borders who will lose their jobs as war production is curtailed.

This article gives an estimate of the reemployment problem presented in the various States by these demobilized persons. The estimate depends upon four assumptions, which are not intended as predictions but do provide a convenient basis for a preliminary analysis: (1) That the war will be ended both in Europe and Asia by December 1944, at the peak of the war production effort; (2) that the United States will maintain an armed force of 2,500,000 in the early post-war years; (3) that war production will be rapidly curtailed to the level of post-war defense requirements; and (4) that industrial reconversion and expansion to high levels of civilian production will proceed as rapidly as physical and technological factors will allow, with no delays caused by financial difficulties or uncertainty of markets. Use of this last assumption means that the magnitude of the coming reemployment problem, is, if anything, understated.

As is indicated in the map on page 2 there are dramatic contrasts in the severity of the demobilization problems which the different States will experience. Michigan, with its converted automobile industry, will have the gravest situation. It appears that there will be almost 6 ex-servicemen or former war workers for every 10 persons employed in the State in 1940. Connecticut, long a center of the munitions industry, will also be seriously affected, with a ratio of demobilized persons to pre-war employment of nearly 49 percent. Washington and Indiana will have ratios of 45 percent.

The next group includes eight States in which the problem of demobilization will be somewhat less severe, with demobilization ratios ranging from over 35 to 42 percent. These States are California, Kansas, Maryland, New Jersey, Ohio, Pennsylvania, Rhode Island, and Utah.

In a considerably larger group, containing 17 States, the impact of demobilization will be relatively lighter, either because the volume of war industry is not very large or because the high pre-war level of peacetime employment offers a relatively favorable prospect of absorbing the surplus. The demobilization rates for these States—Alabama,

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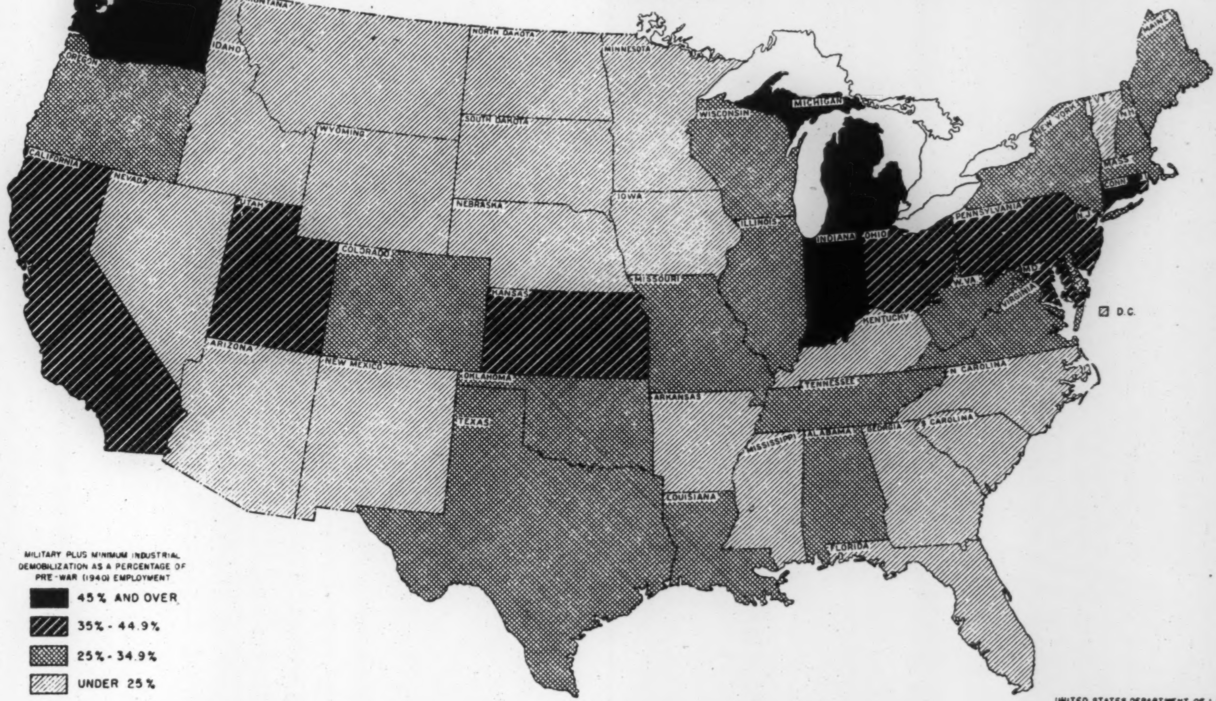
[1] Prepared in the Bureau's Post-War Division by Emile Benoit-Smullyan.

ESTIMATED IMPACT OF MILITARY AND INDUSTRIAL DEMOBILIZATION
BY STATES


WASHINGTON
MONTANA
NORTH DAKOTA
MINNESOTA
MAINE
OREGON
IDAHO
WYOMING
SOUTH DAKOTA
WISCONSIN
MICHIGAN
NEW YORK
VT.
N.H.
MASS.
R.I.
CONN.
CALIFORNIA
NEVADA
UTAH
NEBRASKA
IOWA
ILLINOIS
INDIANA
OHIO
PENNSYLVANIA
N.J.
COLORADO
KANSAS
MISSOURI
W.VA.
MD.
DEL.
VIRGINIA
KENTUCKY
D.C.
ARIZONA
NEW MEXICO
OKLAHOMA
TENNESSEE
N CAROLINA
ARKANSAS
TEXAS
MISSISSIPPI
ALABAMA
GEORGIA
S CAROLINA
LOUISIANA
FLORIDA
MILITARY PLUS MINIMUM INDUSTRIAL DEMOBILIZATION AS A PERCENTAGE OF PRE-WAR (1940) EMPLOYMENT
45% AND OVER
35% - 44.9%
25% - 34.9%
UNDER 25%

UNITED STATES DEPARTMENT OF LABOR
BUREAU OF LABOR STATISTICS

Colorado, Delaware, Illinois, Louisiana, Maine, Massachusetts, Missouri, New Hampshire, New York, Oklahoma, Oregon, Tennessee, Texas, Virginia, West Virginia, and Wisconsin—range between 24.7 and 34.3 percent.

It is significant that even in the 20 remaining States (including the District of Columbia) with ratios under 24.7 percent, the demobilization problem will in no case be less than 19 percent of pre-war employment. These States comprise a large part of the South and Southwest, as well as of the northern plain and northwest mountain areas. In these regions the development of war industry has been light, and the chief problem will be the placing of returned servicemen.

Three general comments are relevant. First, in no State is the problem negligible. A sudden expansion in the labor supply of only one-fifth, relative to normal labor requirements, is enough to cause serious disturbance unless foreseen and prepared for. Second, the gravity of the problem for each State will depend chiefly on the expansion of the industrial base during the war, since the demobilized servicemen will constitute a fairly constant proportion of the population and of the pre-war employment in each State. Third, even where the problem is not acute over the State as a whole, there may be violent local dislocations for which preparation will be necessary.

Number of Demobilized Persons, by States

In the accompanying table are given the estimates upon the basis of which the map was constructed. The national total of 8,500,000 men to be demobilized from the armed services is derived by subtracting the assumed 2,500,000 post-war armed force from the published estimates of a peak armed force of 11,000,000. The State totals were derived by dividing the 8,500,000 national total according to 1940 State population ratios, adjusted for sex and age distribution. It was assumed that servicemen will return to the States from which they were inducted.

The national total of slightly over 6,000,000 demobilized industrial workers was derived by estimating for each of 14 manufacturing industries (1) a rate of contraction of munitions production, and (2) the most rapid possible rate of expansion of civilian production, as explained above; and totaling the differences between December 1944 employment and lowest subsequent employment for each industry. The number of demobilized industrial workers in each State was derived by computing ratios of State to total employment in December 1944 for separate manufacturing industries, from forecasts of the Bureau of Labor Statistics and the Bureau of Employment Security, or from census data; applying these ratios to the indicated total demobilization for each industry; and totaling the results for each State. This assumes that demobilized industrial workers will, in the first instance, constitute a problem for the States where they held war jobs, either by seeking new jobs, drawing unemployment compensation or relief, requiring retraining services, or in other ways.

If a count of war jobs is made on the basis, not of war industry, but of war output not required in the post-war period—ships and planes in excess of peacetime needs, and ordnance items such as guns, ammunition, and tanks—a smaller national total (4,600,000) of industrial demobilization is obtained. This, however, would understate the industrial demobilization problem for the Nation as a whole and for all but 11 States, since in most cases the number of workers permanently displaced by the contraction of specialized munitions production will be less than the number temporarily disemployed by the reconversion of war industry in the broader sense.

It should be noted that the figures on industrial demobilization minimize the actual reemployment problem in the sense that they do not include job shifts within a given industry which produce no net contraction of employment. It should also be observed that all demobilization figures are totals for the reconversion period as a whole and do not measure unemployment at any particular time.

Military and Industrial Demobilization, Related to Pre-War Employment, by States

State	Number of persons (in thousands)				Demobilized persons as percent of 1940 employment
	1940 employment[1]	Demobilized persons			
		Armed forces	Industrial workers	Total	
United States[2]	45, 166.0	8, 500.0	6, 070.0	14, 570.0	32.3
Alabama	893.8	172.6	88.6	261.2	29.2
Arizona	150.2	32.3	1.1	33.4	22.2
Arkansas	583.9	118.2	16.0	134.2	23.0
California	2, 525.3	482.0	577.6	1, 059.6	42.0
Colorado	349.7	70.6	22.4	93.0	26.6
Connecticut	680.5	113.0	218.5	331.5	48.7
Delaware	102.6	17.9	17.3	35.2	34.3
District of Columbia	308.9	50.2	21.7	71.9	23.3
Florida	683.3	125.0	30.3	155.3	22.7
Georgia	1, 107.4	196.4	49.6	246.0	22.2
Idaho	158.6	34.0	.2	34.2	21.6
Illinois	2, 874.4	523.6	390.2	913.8	31.8
Indiana	1, 151.7	214.2	304.3	518.5	45.0
Iowa	862.8	153.8	40.4	194.2	22.5
Kansas	583.8	108.8	111.0	219.8	37.6
Kentucky	847.6	172.6	22.0	194.6	23.0
Louisiana	771.1	152.2	53.1	205.3	26.6
Maine	279.0	49.3	35.0	84.3	30.2
Maryland	690.9	125.0	165.5	290.5	42.0
Massachusetts	1, 534.8	266.9	223.2	490.1	31.9
Michigan	1, 825.0	350.2	717.7	1, 067.9	58.5
Minnesota	931.5	176.8	35.8	212.6	22.8
Mississippi	727.5	131.8	18.2	150.0	20.6
Missouri	1, 297.1	232.9	122.2	355.1	27.4
Montana	185.6	36.6	2.2	38.8	20.9
Nebraska	433.4	79.9	18.0	97.9	22.6
Nevada	41.5	8.5	1.5	10.0	24.1
New Hampshire	176.0	29.8	18.4	48.2	27.4
New Jersey	1, 569.1	281.4	327.8	609.2	38.8
New Mexico	140.3	33.2	.3	33.5	23.9
New York	4, 974.5	913.8	500.1	1, 413.9	28.4
North Carolina	1, 208.7	225.2	22.6	247.8	20.5
North Dakota	200.4	40.0	.1	40.1	20.0
Ohio	2, 345.0	440.3	506.0	946.3	40.4
Oklahoma	658.7	145.4	46.1	191.5	29.1
Oregon	389.8	70.6	58.5	129.1	33.1
Pennsylvania	3, 230.2	639.2	579.3	1, 218.5	37.7
Rhode Island	264.7	45.9	48.4	94.3	35.6
South Carolina	661.1	115.6	20.0	135.6	20.5
South Dakota	204.5	39.1	.2	39.3	19.2
Tennessee	941.7	181.0	51.2	232.2	24.7
Texas	2, 138.4	423.3	140.7	564.0	26.4
Utah	148.9	34.0	19.7	53.7	36.1
Vermont	125.1	21.2	4.8	26.0	20.8
Virginia	933.1	175.1	92.3	267.4	28.7
Washington	607.7	115.6	158.9	274.5	45.2
West Virginia	519.1	119.8	37.0	156.8	30.2
Wisconsin	1, 060.8	198.0	134.9	332.9	31.4
Wyoming	86.6	17.8	0	17.8	20.6

[1] From 1940 Census of Population.

[2] Differences between United States totals and sums of State components are due to rounding of figures.

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[From the MONTHLY LABOR REVIEW (July 1943) of the Bureau of Labor Statistics, United States Department of Labor]

Methods of Controlling Absenteeism[1]

Summary

THERE is no known cure-all which will prevent workers from being away from their jobs. Numerous conditions exist which make some absences unpreventable. In other cases, obvious reasons or specific causes cannot be singled out and the problem is one of worker morale. Absenteeism is an individual plant condition, and effective control over this illness of industry must be approached first by an accurate diagnosis of the facts defining the problem; and second, by the application of remedial measures designed to effect a partial or complete cure. First steps forward are the adoption of a uniform definition of absenteeism by industrial establishments and the maintenance of absence records that lend themselves to analysis. Experiences of other plants or industries in absence analysis and control are also helpful to individual companies in assisting them to apply the most effective remedies.

Because of wide variations in the extent of absenteeism reported by various airframe plants, the Bureau of Labor Statistics asked company officials to comment on methods of recording absenteeism and steps taken to determine causes. Replies received indicated clearly that failure to adhere to a uniform definition of absenteeism and lack of uniformity in maintenance of absence records were responsible for some of the differences in absence rates reported by airframe establishments. Many plants submitted, in addition, detailed reports on absence-control systems in operation.

Maintenance of company-operated medical units, improvement of plant facilities, and carefully planned work schedules are methods being utilized to curtail absences caused by illness and injury. Arrangements by companies, transit agencies, and local communities to provide adequate commuting facilities may help in removing transportation difficulties. Employers, communities, and the Federal Government can cooperate in alleviating critical housing shortages and subnormal living conditions which contribute to absenteeism. For situations arising from poor morale among workers, several kinds of publicity and morale-building campaigns have been used, as well as the establishment of machinery for handling employee job problems and supervisor relationships. Some companies have also provided recreational and entertainment facilities for their workers. As a final resort, certain disciplinary measures have been used when other means of reducing absences have proved ineffective, but such measures should be used only with caution.

Scope of Study

Letters were written by the Bureau of Labor Statistics to 34 major airframe plants which had been reporting data on absenteeism to the Army Air Forces since January 1943. The following questions were submitted to these plants:

(1) What is your definition of absenteeism? Do you include in absenteeism time lost due to tardiness, part-day absences, vacations, and authorized days off?

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[1] Prepared in the Bureau's Division of Construction and Public Employment, by Jack Tourin.

(2) Do you maintain a record of absenteeism by causes? How do you establish the causes of absenteeism? Do you feel that your method of establishing absenteeism causes gives accurate results?

(3) Have you analyzed absenteeism to determine the proportion that is due to "repeaters" and the extent to which it is general among workers?

In addition, comments were requested on methods of reducing absenteeism which had proved effective in individual plants. The replies received from the 29 reporting companies are here summarized.

Definition of Absenteeism

The definition of absenteeism as supplied to airframe plants for reporting purposes was as follows:

> An employee is considered as an "absentee" who does not report for work during the entire period of any shift on which he is scheduled to work. Include lost time through absence for a whole shift without permission and through absence for a whole shift due to industrial and nonindustrial sickness or accidents. Do not include time lost due to tardiness or to officially granted vacation or leave (other than sick leave, which should be included) or to lay-offs; nor time lost for a *partial* shift for any cause.

Only 7 of the 29 plants from which replies were received were following this definition strictly. Sixteen plants indicated that they did not segregate authorized days off in reporting time lost from absenteeism. Seven plants included in their computations man-hours lost through vacations. Part-day absences were also included by 7 plants, and 4 counted time lost from tardiness as absenteeism. Greater uniformity in reporting was in prospect, however, since a number of plants which were reorganizing their absence-control systems stated that authorized absences would henceforth be excluded from the calculations of man-hours lost. In other plants these figures were recorded separately and apparently could be segregated from total man-hours lost without great difficulty.

Stated Causes of Absenteeism

A number of plants indicated that they analyzed causes of absenteeism and maintained and tabulated absenteeism records on a plant-wide basis. Other plants stated that no regular records of absenteeism by cause were maintained. Several companies reported that although no plant-wide analysis was made, information on causes of absenteeism was kept on individual employee records. In general, almost all reporting plants stated that absence-control programs were being instituted or revised to include detailed analysis of causes.

Causes most frequently recorded were as follows:

1. Illness and injury (industrial or personal).
2. Personal reasons.
3. Transportation.
4. Family difficulties.
5. Miscellaneous, or unknown reasons (or no report).

A large variety of causes was itemized in detail and included such factors as vacations, authorized leaves and lay-offs, which under the specified definition of absenteeism should have been excluded. Among specific reasons given were home responsibilities, care of children, shopping, housing, rationing, selective service, necessity to obtain professional services, jury duty, bad weather, observance of religious holiday, and lost badges and credentials. A number of companies classified all causes as either excused or unexcused (or authorized or unauthorized) and all reasons in the latter group were placed in an A. W. O. L. (absence without leave) category.

There appeared to be divergence of opinion as to the general reliability of these results. One plant estimated only a 5-percent inaccuracy in its figures, but others frankly stated that the human element involved in determining causes was a limitation on the reliability of any cause analysis. Most establishments felt that the more exhaustive absence-control systems they were inaugurating would provide for greater accuracy in classifying causes.

Telephone calls or letters received from absentees and written absence reports submitted by returning absentees were the procedures for establishing causes.

Most companies operating absence-control systems provided for telephone service to their absence units or personnel offices and required employees unable to report for work to inform their supervisors immediately. In some instances letters of explanation were considered satisfactory. Almost every plant with an established absence unit required the employee to complete an absence report upon returning to work, with the cause of the absence specifically stated.

The following procedures for verifying causes were reported:

(*a*) Interview of returning absentee by company official.
(*b*) Physical examination by company medical department.
(*c*) Home visit by company nurse.
(*d*) Home visit by company field representative.
(*e*) Review and analysis by absence-control unit.

In many plants before an absentee was permitted to return to work, he was required to report for an interview. This interview was conducted by the company's personnel office or by the employee's department head, job foreman, or direct supervisor. At this time, the reason for his absence had to be substantiated to avoid disciplinary action. In a number of plants if the employee had specified illness as the cause of absence, he was required to report for a medical examination at the company dispensary or first-aid unit and obtain clearance from a physician. Many companies had staffs of field representatives and visiting nurses to investigate absenteeism cases by visits to the employee's home. Some plants provided for investigation of all absentees whereas others merely conducted spot checks of special cases. Generally, nurses followed up on illness claims, and field representatives investigated other causes. A review and analysis of all cases was usually made by absence units in plants, to establish causes of absenteeism for inclusion in plant-wide tabulations.

Availability of Data on Chronic Absentees

Few companies reported that data on "repeaters" were available regularly, although spot checks had been made in several plants. It should be observed that the determination of chronic absenteesim requires study over a considerable period of time. A statement that "20 percent of the employees are responsible for 50 percent of the lost time" is useful only if the period covered by the statement is given. For example, if only 1 day were covered, it might be said that "6 percent of the employees caused 100 percent of the lost time." The amount of time loss attributed to any stated proportion of all employees will tend to decline as the period covered by the study increases. One large plant reported that 68.8 percent of its employees accounted for 100 percent of all absences during a 10–week period. This is, of course, another way of saying that during the period 31.2 percent of the employees were not absent at any time.

Studies of "repeat" absenteeism should also be distinguished from studies of the frequency with which absences of different duration occur. Repeated absence refers to the number of occasions on which an employee did not check in for work. The duration of an absence refers to the length of time that a worker remained away from his job. These latter studies can be made covering a relatively short period of time. For example, a survey in one large plant revealed that during a recent month 40 percent of all absences were of 1 day's duration only. Data of this type can be helpful in revealing the effectiveness of absence-control programs with respect to preventable short-term absences. Many companies were of the opinion that their new absence-control systems would provide for more accurate data in studying repeated absenteeism.

Use of Incentive Systems and Disciplinary Measures

It appeared that disciplinary measures were more widely used than incentive systems as means of checking absenteeism. Many companies indicated that chronic offenders were discharged for unauthorized or unexcused absences. "Visual reprimands" and "flag warnings" inserted in time-card racks were employed by other plants as a means of forewarning employees of disciplinary action. One large establishment which had experimented with this type of warning reported that it was being curtailed because it seemed to arouse resentment on the part of the employee. Poster and bulletin campaigns prevailed as methods of promoting awareness among employees of the serious nature of absenteeism. Interdepartmental competition was used by a number of plants to encourage better attendance, and recognition of outstanding groups was awarded by displaying banners, score boards, graphs, charts, etc. One plant reported that it had just inaugurated a lottery plan for awards to departments with perfect attendance records (no A. W. O. L. absenteeism). Prizes of war bonds and stamps were to be given to employees in these departments who were successful in the lottery drawing.

Suggested Methods of Controlling Absenteeism

The problem of reducing absenteeism can be approached first, by the determination of the facts that define the problem; and second, by the adoption of measures designed to correct the causes of absenteeism as disclosed by the records. To facilitate more extensive use of such techniques a list of records and remedies has been compiled.

Section I itemizes records which have been found useful in actual plant experience. It is not expected that every establishment would necessarily maintain all records listed. Some, such as attendance and sex records, are already kept by many companies. Others could be added if the additional information were considered valuable. Section II summarizes remedies which have been found helpful in reducing absenteeism and also in improving the morale of workers generally. The suggested remedies are arranged according to major causes of absenteeism and reveal numerous methods which have been tried.

These suggestions have been compiled from the experience of the Bureau of Labor Statistics and the Army Air Forces in their various investigations of the problem in a number of plants throughout the country. Specific causes of absenteeism, it has been found, can be dealt with directly. Where no obvious reasons are evident and specific causes cannot be singled out, the suggested approach is to place emphasis on the maintenance of worker morale.

I. *Check List for Maintenance of Records*

	Yes	*No*
A. Plant records:		
1. Does the company follow the definition of absenteeism as specified below		
"An employee is considered as an 'absentee' who does not report for work during the entire period of any shift on which he is scheduled to work. Include lost time through absence for a whole shift without permission and through absence for a whole shift due to industrial and nonindustrial sickness or accidents. Do not include time lost due to tardiness or to officially granted vacation or leave (other than sick leave, which should be included) or to lay-offs; nor time lost for a *partial* shift for any cause."		
2. Does the company maintain a daily force report of employees scheduled to report for work, this report detailing the employees present and absent?		
3. Treatment of terminations:		
(*a*) Does the company terminate the employment of absent workers after a specified lapse of time?		
(*b*) Are absentee records and rates adjusted for quits without notice?		
B. Employee records:		
1. Notification of absence:		
(*a*) Does the company require employees who absent themselves to contact their supervisors by phone?		
(*b*) Are preliminary absence reports prepared on the basis of these calls?		
2. Does the company require returning absentees to submit a written report explaining the reason for the absence?		
3. Do individual employee-absence records show the following:		
(*a*) Department		
(*b*) Shift		
(*c*) Hours of work		
(*d*) Sex		
(*e*) Age		
(*f*) Occupational title		
(*g*) Marital status (number and ages of children, if any. Employment of husband and wife)		
(*h*) Date of absence (date and day of week with special note of week-ends, holidays and pay days)		
(*i*) Cause of absence		
(*j*) Length and frequency of absences		
(*k*) Authorization (excused or unexcused)		
(*l*) Comments on absence after interview with absentee		
4. Are these records regularly tabulated and analyzed according to shift, department, and for the entire plant?		
5. If formal records are not maintained, is the absentee required to make an official explanation upon return to work?		

II. *Suggested Measures to Reduce Absenteeism*

Cause	*Possible remedies*
A. Illness and injury	1. Maintenance of company-operated unit, dispensary or first-aid station on plant premises with physicians or nurses in attendance as required. Facilities for— (*a*) Entrance physical examination for new employees. (*b*) Periodic physical examination for all workers. (*c*) Medical examination for employees returning to work after long or repeated illness. (*d*) Vaccination and inoculation services to prevent contagious diseases. (*e*) Distribution of vitamin preparations to workers. (*f*) Visiting-nurse service for employees confined to their homes. 2. Health programs and accident-prevention campaigns by means of posters, bulletins, lectures, etc. Cooperation with governmental agencies such as U. S. Public Health Service. 3. Adequate plant facilities: (*a*) Improvement of plant heating, ventilating, and lighting systems where required. (*b*) Periodic checks of safety devices for necessary repairs and improvement. (*c*) Adequate sanitary facilities, washrooms, rest rooms and change rooms, easily accessible to employees. (*d*) Cafeteria or other eating facilities, to provide hot and nutritious meals for employees at reasonable prices. 4. Hospitalization, accident and sickness insurance. 5. Authorization of adequate vacation, leave, and rest periods. 6. Carefully planned work-shift schedules: (*a*) Planned rotation of shifts to avoid excessive night work, week-end work, or irregular shift changes. (*b*) Reduction of excessively long working hours. (*c*) Arrangements for shorter schedules for female and older male employees not accustomed to long work shifts.
B. Transportation and housing	1 Arrangements with local communities and transportation agencies for— (*a*) Additional facilities where required. (*b*) Special time schedules to meet needs of plant. (*c*) Improvement of traffic conditions where required. 2. Arrangements by company for— (*a*) Plant-operated transportation facilities. (*b*) Staggering of work shifts to avoid congestion. (*c*) Employee motor pools and car-sharing plans. (*d*) Notification to workers of serious weather conditions which might affect transportation to and from plants.

II. *Suggested Measures to Reduce Absenteeism*—Continued

Cause	*Possible remedies*
B. Transportation and housing—Continued.	3. Joint cooperation of companies, local communities, and the Federal Government to provide for— (*a*) Assistance for new employees in finding suitable dwelling accommodations in existing communities, as close to the plant as possible. (*b*) Construction of housing projects for families. (*c*) Construction of dormitory facilities for individuals. (*d*) Improvement of sanitation and sewage conditions in housing areas. (*e*) Provision for adequate electricity, gas, and water services.
C. Personal reasons-------- (Family difficulties; home responsibilities; shopping; personal needs; rationing; selective service; tax and legal matters; etc.)	1. Establishment of ration boards in plants, where employees may obtain food-, gasoline-, and tire-ration books and certificates, and receive advice on rationing. 2. Maintenance of a draft-board adviser in the plant to assist employees in handling selective-service matters. 3. Provision for legal and tax advice in plant at specified periods. 4. Cooperation of local professional societies to provide legal, medical, and dental service to employees during nonworking hours. 5. Surveying adequacy of shopping, banking, barber and beauty shop facilities in vicinity of plant and in nearby communities. (*a*) Arranging with merchants' associations and local communities to keep these facilities open during employees' nonworking hours. (*b*) Where nearby facilities are not available, providing such services on plant premises. 6. Surveying child-care facilities available to plant employees. Cooperating with local communities in establishing and operating such facilities to care for children of woman workers. 7. Determination of home responsibilities before hiring married woman workers (e. g. number of children under school age, children aged 6–10, number of workers in family, etc.). 8. Utilization of housewives, white-collar workers, and students for part-time work. 9. Arrangements for authorized leave or part-time attendance for employees with small businesses or farms requiring partial or seasonal attention.
D. Willful absences—worker morale. (In taking steps to deal with willful absences the company should maintain records which enable it to distinguish between excused and unexcused absences. Unexcused absence or chronic or repeated absence may not necessarily be willful.)	1. Publicity and morale-building campaigns: (*a*) Direct appeal to workers by means of posters, bulletins, company publications, speakers, radio programs, etc., to impress workers with the importance of being on the job. (*b*) To promote feeling of personal participation in war work, information to employees on the use to which their products are put and how each worker's job is linked to the finished product and to actual combat.

II. *Suggested Measures to Reduce Absenteeism*—Continued

Cause	*Possible remedies*
D. Willful absences—Worker morale—Continued.	(*c*) Employee-suggestion programs, scrap drives, war bond and stamp campaigns, and other means of generally stimulating morale. (*d*) Rewards for good attendance, such as individual and group banners, certificates and pins, participation in lottery drawings, etc. 2. Machinery for sympathetic discussion of employee job problems with representatives of management labor-management, or union committees, in order to solve individual worker problems. 3. Proper classification of workers to insure best utilization of skills; provision for transfer of workers where work is not appropriate to employees' skill, physical ability, or temperament. 4. Adequate supervision of personnel with continued checks on worker-supervisor relationships. 5. In-training and up-grading programs to recognize superior ability and stimulate ambitions for promotion. 6. Training programs for supervisors. 7. Recreation and entertainment: (*a*) Cooperation with local communities in providing adequate entertainment facilities for workers during their leisure time. (*b*) Provision by company for recreational facilities in vicinity of plant or on plant premises. (*c*) Organization by plant of competitive recreation among employees, such as bowling and baseball teams. 8. Disciplinary measures (disciplinary measures should be considered with great care. Cooperation of labor-management committees and unions should be secured for any action): (*a*) Removal of absent workers' time cards from racks and substitution of "flag warnings" or visual reprimands. (*b*) Filing of written explanation of absences and mandatory interviews with foreman, personnel department, or absence-control unit before absentees can return to work. (*c*) Referral of the names of willful absentees to labor-management or union committee for reprimand or discipline. (*d*) Posting public notices of absentees and individual group rates of absenteeism, on bulletin boards. 9. Discouragement of "job shopping." Strict conformity with War Manpower Commission regulations governing certification requirements and clearance from the plant before U. S. Employment Service will consider applications for other jobs.

U. S. GOVERNMENT PRINTING OFFICE: 1943

OCCUPATIONS + INDUSTRIES - 1941

WOMEN HAVE DEFENSE ROLE AT R.C.A.IN CAMDEN

The importance of women in key national defense industries is stressed in Camden RCA where Miss Jewel Williams, of the Special Apparatus Division, occupies a unique position in the national defense program as exemplified in the city's industries. Miss Williams, shown in the picture(see clipping) is engaged in the operation for which she trains girls at RCA--a small spiral of metal, set in a deep part of one of the instruments vital to the defense, formerly was placed by the long pliers near Miss Williams' right hand. This time-costing operation was eliminated when it was found delicate female hands could set the screws in place without using the pliers. Hands of hundreds of women, trained by Miss Williams(who has trained 900 RCA girls since she went to work for the old Victor Company in 1918) have "that certain feminine touch" enlisted by the nation for a special role, applying solder to important delicate wire connections.

Courier Camden, N.J. April 21, 1941

G

From "Times" New York City
Dec. 2, 1941

CONGRESS OF INDUSTRY TO HONOR SEVEN WOMEN IN DEFENSE WORK

Women in defense will be honored Thursday in a special program of the forty-sixth annual Congress of American Industry, being held here this week by the National Association of Manufacturers. The special program will be devoted to the achievements of seven women who hold industrial or technical posts in companies working on the defense program.

At 5:45 p.m. the National Broadcasting Company will interview two women who typify important contributions made by women in defense industries. They are Miss Vivian Kellams, president of the Kellams Manufacturing Company, who was chosen last year as the outstanding woman industrialist in the country, and Miss Catherine Ferguson, assistant metallurgist of the General Electric Company.

Guests of the program also will include Miss Chloe DeLong of the Firestone Tire and Rubber Company, Akron, Ohio; Miss Mary Elizabeth Miller of the Glen L. Martin Company, Baltimore, Md.; Dr. Hertha Freche of the Aluminum Company of America, Pittsburgh; Mrs. Ruth Wallgren of the Westinghouse Electric and Manufacturing Company, Philadelphia, and Miss Jewel Williams of the Radio Corporation of America, Camden.

Miss DeLong is a sculptress who designs new models for rubber tires in clay. Miss Miller a 24-year-old graduate of the University of Maryland, is one of the few women aviation engineers in the country. Dr. Freche is a research metallurgist who specializes in new aluminum alloys for planes and tanks.

Mrs. Wallgren, a descendant of Captain John Ericsson, designer of the Monitor of Civil War fame, is an engineering draftsman. Miss Williams is foreman of the R.C.A. assembly department at Camden, where hundreds of girls are employed assembling vacuum tubes for radio communications equipment.

PROPORTION OF WORK WEEK DEVOTED TO WAR PRODUCTION IN SELECTED MICHIGAN MANUFACTURING INDUSTRIES - October, 1941

(Source: Michigan Labor and Industry, Volume 1, Number 2,
December, 1941, page 3.)

Industry	Number Plants in Sample	Ratio Female to All Workers	Hours Worked Per Week		Percent Hours Devoted to War Production		
			Male	Female	Total	Male	Female
Automobiles	68	*	*	*	14.4	*	*
Automobile Parts	41	9.0	47.2	37.4	47	50	15
Shipbuilding	5	0.0	33.7	-	91	91	-
Iron and Steel	19	2.1	37.0	37.7	52	53	**
Foundaries, Machine Shops	137	12.5	42.5	38.0	52	54	35
Engines, Machinery	20	3.1	48.6	39.6	69	70	27
Electric Machinery	23	21.7	40.8	37.7	37	40	27
Machine Tools	31	14.5	47.3	40.1	69	69	70
Stamped, Enameled Products	22	19.3	39.3	34.6	26	25	29
Brass Products	26	15.0	30.9	38.6	51	53	41
Dairy Products	11	8.4	46.2	24.6	23	24	14
Paper Boxes	8	17.0	43.1	39.5	44	46	32
Chemicals	17	1.4	40.7	37.8	58	58	32
Men's Clothing	9	81.3	41.6	36.3	51	55	50
Cement	8	0.9	39.8	39.2	20	20	7
Leather	10	24.6	38.3	38.1	25	28	15

* Not Available

**Less than 5 per cent.

Proportion of women employed in each industry

(Source: Michigan Labor and Industry, Volume 1, Number 2, December, 1941, page 4.)

Industry	Percent women employed
Auto Parts	9.0
Auto Tires	14.0
Railroad Car Building	0.0
Aircraft	2.5
Shipbuilding	0.0
Iron, Steel	2.1
Structural Steel	0.1
Foundries, Machine Shop	12.5
Tools	35.7
Engines, Machinery	3.1
Electrical Machinery	21.7
Machine Tools	14.5
Hardware	37.5
Steam Fittings	3.9
Stoves	3.8
Sawmills	1.1
Millwork	25.3
Furniture	8.5
Stamped, Enameled Products	19.3
Brass	15.0
Jewelry	25.2
Radios	54.2
Tobacco	81.8
Meat	25.2
Confectionery	79.4
Ice Cream	13.3
Dairy	8.4
Beverages	0.3
Flour	2.9
Baking	34.1
Canning	51.4
Miscellaneous Food	33.2
Beet Sugar	0.5
Paper Pulp	16.7
Paper Boxes	17.0
Chemicals	1.4
Pharmaceuticals	44.2
Paints	3.9
Knit Goods	74.4
Woolens, Worsteds	30.4

(Continued on next page)

Proportion of women employed in each industry
(Source: Michigan Labor and Industry, Volume 1, Number 2, December, 1941, page 4.)

Industry	Percent women employed
Men's Clothing	81.3
Women's Clothing	91.4
Printing	27.4
Newspaper Publishing	1.9
Cement	0.9
Brick, etc.	1.9
Tanning	10.3
Leather Goods	24.6
Boots and Shoes	45.7
All Others	29.2

From Midmonthly Survey, November 1941 p 330

THE SOCIAL FRONT

Jobs for Women

A rapid increase in the number of women workers both in defense and in non-defense industry is reported by the Federal Security Agency. In many sections of the country, employers are "experimenting" with women in jobs formerly held by men, frequently to replace men who have been drafted. On the West Coast, aircraft plants are beginning to employ substantial numbers of women in production jobs. One California aircraft maker began in August to take on fifty women a day, without pre-employment training, for riveting, spray painting, pasting and gluing, spot welding, arc welding, automatic drill press operations, automatic turret lathe operation, wiring, and other production jobs. This company estimates that eventually about a third of its employees will be women. A San Diego plane maker has announced that 2,500 women will be employed as detail assemblers, with the wives and mothers of present employees having first preference, and other relatives of present employees as second choices. A Maryland company making textile machinery has notified the local employment office that it would hire women who have had five weeks intensive training in light sheet metal work at a vocational school. In Milwaukee, so many taxicab drivers are going int into the Army or taking production jobs that women drivers are being hired. From New York and Connecticut the Federal Security Agency has received reports of difficulty in getting women recruits for preemployment courses, partly because of the unwillingness of girls and women to prepare for machine shop occupations, and partly because of their unwillingness to take training without pay.

appendix h

July, 1941, Woman Worker

MORE WOMEN PLACED IN DEFENSE JOBS

Defense jobs have called women to many tasks. These range from nursing, operating power sewing machines, or dietetic work, to assembling gas masks and doing fine precision work for airplane instruments. Two questions asked repeatedly cannot be fully answered, though some indications can be given: One, How many women are being added to defense employment? the other, What new jobs are women doing?

There is no basis for arriving at the full numerical increase in woman employment, though the increases can be told for important scattered plants - too small a sample for a complete estimate. In fact, even the full increase during World War I is not known, though in a large sample of war implement and war instrument industries investigated by the Women's Bureau women employees more than doubled in number from 1916 to 1918.

Defense Placements of Women Increase.

Total placements of women by public employment offices were declining in the early months of 1941, but women finding jobs in manufacturing were increasing somewhat. The Bureau of Employment Security makes special tabulations of placements in some 400 defense occupations, but only about 1 percent of all women's placements are in these jobs. However, such placements were more than three times as great in the early months of 1941 as in the late months of 1940.

Numbers of Women in Defense Jobs.

There are at least four sources of data on number of women employed, but none can give the complete picture as to how many are in defense jobs. Of course the number changes daily.

1. Census data by industry, when they become available, will show how many women worked in the spring of 1940 in industries that later developed defense production. The number since added to these is unknown, and the situation is constantly changing.

2. Reports of placements in defense jobs show only those made by public employment agencies, and there is no complete information on numbers hired at plant gates.

3. Indexes of employment trends are made from questionnaires sent out to employers. These are published, by sex, twice a year by the United States Department of Labor. They are the best available indications of the trend, but they are samples based on particular States and industries and hence show only the movement of employment and not the complete numbers.

4. Finally, there are scattered reports for important particular plants. These are based on occasional special investigations, and show nothing as to complete numbers except for those plants at the time investigated. However, they are very interesting and they indicate the situation. (See Woman Worker, May 1941.)

Types of Work Women Are Doing.

Women's delicate workmanship and skill are a boon to defense operations, but the great numbers employed are in much the same kinds of factory work long done by women. Reports that women are driving taxis, or tending filling stations, do not mean the absorption of great numbers in such occupations. Where women are in jobs unusual for them they are relatively few, and in most cases have specialized experience or aptitude for the work.

Of women's placements in early 1941 in defense occupations listed by the Employment Service, 60 percent were in textile mills, most of them as yarn winders, frame spinners, weavers, slubbers, and throwers - traditional employments for women. Some were in electrical plants, as radio assemblers, or armature winders. A few were in less usual jobs, such as work at engine lathes, milling machines, or as core makers, spot welders, or airplane coverers. Women are proficient at inspecting cartridges and polishing small parts for rifles, and in one plant they are reported as assembling, shaping, sharpening, testing, and chrome plating bandage shears for government use. Women work in rubber factories on the bullet-proof gas tanks - rubber lined and covered - so vital to life in aircraft, but here again the actual process is not unusual for women. They work also on silk parachutes, but the jobs consist of skilled cutting and sewing.

Women's Work on Airplane Parts.

In airplane assembly factories women constitute a very small part of the productive labor force, probably only a fraction of 1 percent, and their chief work is sewing. Of course, many do the usual types of clerical work in the plant offices. Reports of any appreciable number of women in "Aircraft plants" refer chiefly to the places making the parts and accessories for planes. Women are especially good at certain processes on airplane instruments, primarily the same types of work women long have done in electrical or other plants, such as coil winding, bench work, inspection, or assembly of delicate parts.

In assembly factories, the force of women could be considerably increased. One of the predominating jobs in the assembly of a plane is riveting, with its concomitant processes of drilling, counter-sinking, dimpling, and bucking. A large part of this work, though not all of it, might be done by women after a little training.

Much of the bench work on the simpler subassemblies could be done by women, and the skills required do not differ materially from those of women in many other industries. Women could do at least one-fourth of the inspecting, and in case of shortage of male workers considerably more. This refers to inspection of the parts, not to the floor inspection of the assembling of the plane. Inspectors usually advance after plant experience, and to do this work women would need considerably more experience than they have had.

Copy

Federal Security Agency
NATIONAL YOUTH ADMINISTRATION
2145 C Street N.W., Washington, D.C.

June 23, 1941

Dear Miss Robinson:

We regret that it is impossible for us to break down the various types of defense activities in which girls are employed to any greater extent than we have done in the memorandum which we sent you recently. However, we are able to break down some of the numbers by states, as follows:

Girls employed in machine and metal trades

Connecticut	89
Illinois	202
Iowa	82
Maryland	66
Michigan	128
New Jersey	30
New York	44
Ohio	245
Oregon	86
West Virginia	39

The balance of the 1,034 workers are distributed among Colorado, Kentucky, Massachusetts, New Hampshire, New Mexico, Texas, Vermont, Wisconsin and Wyoming.

In radio and electrical shops, the numbers are distributed as follows:

Illinois	58
Indiana	21
Iowa	17
Missouri	14
New York	36
Ohio	59
Pennsylvania	35
Washington	18

Copy

The balance of the 300 workers are distributed among California, Florida, Kentucky, Louisiana, Maryland, Massachusetts, Oregon, Texas and Wisconsin.

With the exception of Texas, which employs 49 girls on automotive and mechanical shops, and Pennsylvania, which employs 17, the balance of the 107 workers are distributed among Arkansas, California, Illinois, Maryland, Missouri, Ohio, West Virginia, and Wyoming.

In drafting and blue printing, Colorado employs 21 girls, Connecticut 98, Georgia 25, Illinois 163, Indiana 35, Massachusetts 21, Florida 16, Kansas 16, Michigan 59, New York 15, Ohio 100, and Pennsylvania 195. The balance of the 810 workers are distributed among California, Iowa, Montana, Nebraska, New Jersey, Oklahoma, Texas, Washington, West Virginia, Wisconsin, and Wyoming.

The sewing projects which employ 11,088 girls are located in Alabama, Arkansas, California, Connecticut, Georgia, Illinois, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Hempshire, New Jersey, New York, Ohio, Oregon, Pennsylvania, Tennessee, Vermont, and Washington.

Besides the articles listed in our previous memorandum, the sewing projects in many states are working for the army cantonments, making such supplies as sheets, pillow cases, etc.; making some items of clothing and also doing clothing repair. All of the employees listed above are employed on our own work projects. In addition to these, we have 6,043 girls employed in army cantonments where they do clerical work, work in laundries, and serve in the hospitals as hospital attendants or as laboratory and technical assistants. Many clerical workers and laundry workers have already obtained their Civil Service rating through this experience.

June 1941.

appendix d
(substituted 4/2/42 here by RW)

Women's Bureau
U. S. Department of Labor
Washington

PLANES IN DEFENSE INDUSTRIES WHERE WOMEN ARE OR WILL BE EMPLOYED IN PRODUCTION 1/

	Product	Estimated number of Men	Estimated number of Women	Date of operation
Alabama				
Childersburg				
Coosa River Ordnance	bag loading	Some women will be employed		summer 1941
Colorado				
Denver Ordnance Plant	small arms ammunition	10,000	2,000	Fall 1941
Connecticut				
Bridgeport				
Remington Arms	small arms ammunition	3,000	1,800	Spring 1941
East Hartford				
United Aircraft	airplane engines	14,000	400	Spring 1941
New Haven				
Winchester Repearing Arms	small arms ammunition	7,800	2,500	Summer 1941
Stratford				
United Aircraft	airplane bodies	3,900	30	Spring 1941
Illinois				
Joilet				
Elwood Ordnance	shell loading	Some of the 6,000 will be women		Fall 1941
Indiana				
Charlestown				
Hoosier Ordnance	bag loading	1,950	1,800	Fall 1941
Indiana Ordnance	bag loading	6,950	1,800	Fall 1941
Kingsbury and Union Center				
Kingsbury Ordnance	shell loading	6,000	3,000	Fall 1941
Iowa				
Burlington				
Iowa Ordnance	shell loading	Some of the 6,000 will be women		Fall 1941
Missouri				
Lake City				
Lake City Ordnance	small arms ammunition	8,000	1,600	Summer 1941
St. Louis				
St. Louis Ordnance	small arms ammunition	Some of the 10,000 to 12,000 will be women		Summer 1941

1/ Includes all outstanding plants in shell loading, bag loading, Small arms ammunition, and fuses.

The Women's Bureau has visited aircraft plants in California, but at time of visit (Spring 1941) women employees in productive divisions were too small in number to be sig~~nificant (less than 100 altogether in 6 major plants~~.

1/ (Continued)- nificant (less than 100 altogether in 6 major plants).

	Product	Estimated number of		Date of
		Men	Women	Operation
New Jersey				
Dover				
Picatinny Arsenal	fuses, explosives	5,600	1,500	Spring 1941
Paterson				
Wright Aeronautical	airplane engines	some of the 15,000 will be women		Spring 1941
New York				
Buffalo				
Curtis-Wright corpotation	aircraft	11,370	35	Spring 1941
Ohio				
Ravenna				
Ravenna Ordnance	shell loading	5,000 - 6,000	2,500-3,000	Spring 1941
Pennsylvania				
Philadelphia				
Frankford Arsenal	small arms ammunition, artillery parts, instruments	8,000	3,500	Spring 1941
Tennessee				
Milan				
Wolf Creek Ordnance	shell loading	some women will be employed		Summer 1941
Utah				
Ogden				
Ogden Ordnance	shell loading	1,000	1,000	Summer 1941
Virginia				
Pulaski				
New River Ordnance	bag loading	2,250-3,000	1500-2,000	Fall 1941

OCCUPATIONS + INDUSTRIES - 1942

See Employment of Women

WAR JOBS FOR WOMEN

Page
Serving Uncle Sam 5
In the War Industries 17
In Business and the Professions 34
As Volunteers 41

Sources tapped: War Department, Navy Department, War Manpower Commission, Civil Service Commission, Women's Bureau of the Department of Labor, Department of Agriculture, Institute of Women's Professional Relations, U. S. Office of Education, Office of Civilian Defense, American Red Cross, the Government's Subcommittee on Nursing, The American Association of University Women, The American Council on Education, and the Career Department of Mademoiselle Magazine.

Sources untapped: All those having succinct summarizing material on the subjects discussed here, or on other phases of this changing war picture, are invited to send them to the OWI Magazine Section, Social Security Building, Washington, D. C., for a possible future revision of this memorandum.

November 1942.

This booklet was prepared for magazine editors. In response to requests it has been made available to the public. It is a publication about the war. When you have finished reading it, please pass it on to a neighbor or a friend for further circulation.

For sale by the Superintendent of Documents, Washington, D. C. Price 10 cents.

WAR JOBS FOR WOMEN

Every American woman wants to help win the war. The problem is how and where to fit into that big word which is daily growing bigger—*Womanpower.*

Many women already are on the jobs they can do best and are putting in full time. Some women still have odd hours in which they could give volunteer patriotic service. Great numbers of women who have hitherto been in the home are taking full time jobs to free men for combat duty as this country's warfare becomes more intensive. Greater numbers need to plan *now* for such service.

The War Manpower Commission estimates that 4½ million women will be engaged in direct war work by the end of 1942, and 6 million by the end of 1943.

But this by no means indicates that only 1½ million women must be added to the labor force. Because of the fact that nearly all able-bodied men over 14 are already in the labor force or in the armed forces, the bulk of the increase of 5½ million in the estimated civilian labor force and the armed forces during the fiscal year of June 1942 to June 1943 will have to be women. June is a peak month in labor requirements. In June 1942, there were 15 million women in the labor force. By June 1943, this number will have to be approximately 20 million.

This country, however, has not yet reached the situation where women *everywhere* are needed for all sorts of work previously done by men, as in England. Employment of women is still a local question which must be dealt with according to the need and the supply of womanpower in the community. There is no rule of thumb for the country as a whole. In crowded war industry-areas, the aim obviously must be to drain every bit of local labor-supply before calling in new labor which would create further overcrowding.

Since America continues to be a land of initiative, the final catalogue of the jobs that women do in this war will be what women make it. Furthermore the place of women in the war industry picture changes so fast that there is no keeping absolutely up to date. This memorandum, therefore, is not even an attempt at an exhaustive catalogue of women's war jobs, but is rather a guide to indicate some of the avenues opening to women, some of the typical jobs in them, and some of the sources of further information.

To Find Out About War Jobs

In general, the following instructions are given for women seeking war jobs:

If you wish to volunteer for unpaid patriotic work, go to your Civilian Defense Volunteer Office.

For opportunities to work for pay in war industries, consult your nearest U. S. Employment Service Office.

For work in government, follow Civil Service announcements through your local post office.

If you wish to try for service with the Women's Auxiliary Army Corps (WAACS) apply at your nearest Army recruiting station.

If you have the aptitudes and the training required by Women's Reserve of the Navy (WAVES) submit a written request for a preliminary application blank to the Director of Naval Officer Procurement of your Naval District.

If you are a trained nurse wishing active duty with the armed forces, consult your local Red Cross Chapter or apply to the headquarters of any of the nine service commands of the Army. Or write for application forms to the National Headquarters, American Red Cross, Washington, D. C., or to the Office of the Surgeon General of the Army, 1818 H Street, NW., Washington, D. C. The Red Cross is official recruiting agency for both Army and Navy nurses, and also recruits medical technicians for the Army.

If you are a retired nurse, badly needed for work on the home front, consult your local hospitals.

Listen to the radio. Read the newspapers and magazines.

SERVING UNCLE SAM

Government war jobs have swelled the population of the national capital to boom-city proportions, and have added materially to the working forces of many other cities. In a single year, 40,000 stenographers and typists—largest block of workers employed—were added to the government pay roll. The Civil Service continues its call for stenographers and typists, traditionally women's jobs, and asks all Federal departments to increase employment of women so that men may go into active service. Both War and Treasury Departments have announced such an employment policy. Sixty percent of the persons now being employed in the Federal government are women. It is estimated that hirings in the metropolitan area of Washington, D. C., alone will continue at the rate of 1,250 a week of which 750 will be women.

The increasing need for men in combat service has also prompted the setting up of the women's organizations of the armed services, the WAACS—Women's Auxiliary Army Corps; the WAVES—Women's Reserve of the Navy; and the WAFS—Women's Auxiliary Ferrying Squadron. Each of these three special services has its own system of recruitment. Civilian posts in War and Navy Departments are recruited, like the rest of the government war jobs, through Civil Service, often supplemented by personal application.

The trend for more women in civil posts and in necessary posts with the armed services as a war-time measure must of course continue. The need for great numbers of women for stenographic, clerical, and typist positions in Federal war agencies in Washington presumably will continue as long as the war lasts.

Women who derive their greatest satisfaction from the feeling that they are actually working with the fighting forces may tally up their own qualifications against the requirements listed by the WAACS, WAVES, and WAFS, and may follow the formulation of other projected outfits such as the one now in process for the Coast Guard. As yet, however, these opportunities should be regarded as strictly limited in number by the legislation or financial budgets on which they were recently set up.

WAACS.—By the early part of 1943, 25,000 women officers and auxiliaries will be serving with the U. S. Army, freeing fighters from such jobs as operating switchboards, typing and clerical work, and operating office machines. WAACS with specialized training will also serve in aircraft warning units, as hostess aides and librarian aides, as drivers of automobiles and repairers of their motors, as pharmacists' assistants in the post exchange, as dieticians and cooks. The act authorizing this new women's auxiliary army will permit an ultimate enrollment of 150,000 women.

Qualifications.—For auxiliaries, must be a citizen, be between 21 and 45 years old, between 5 and 6 feet high, weigh a minimum of 100 pounds, pass intelligence tests, pass physical tests. Marriage is no bar. Must have no children under 14.

There is no longer opportunity to be appointed direct from civilian life to the Officers Candidate School of the WAACS. All future appointments to the Officers Candidate School will be from the ranks after completion of basic training. For the first WAAC officers candidates, some women over 45 years of age were accepted. This will not apply in the future, since promotion will be from the ranks and the age limit is 45 years.

Special opportunities.—WAAC units may go wherever the Army goes and so some probably will have foreign service. General Dwight Eisenhower, Commanding General, European Theater of Operations, has asked for communication and clerical platoons to be attached to large headquarters of the American Expeditionary Forces under his command.

Pay and rank.—The WAAC pay now corresponds to that of the Army. The following list shows the WAAC rank, the Army rank equivalent, and pay under the law recently passed by Congress:

Auxiliary . . . Private . . . $50 per month; Auxiliary, 1st Class . . . Private, 1st Class . . . $54 per month; Junior Leader . . . Corporal . . . $66 per month; Leader . . . Sergeant . . . $78 per month; Staff Leader . . . Staff Sergeant . . . $96 per month; Technical Leader . . . Technical

Sergeant . . . $114 per month; 1st Leader . . . Master (1st) Sergeant . . . $138 per month. Officer's pay ranges from $166.67 per month to $333.33. And subsistence—food, clothes, living quarters, dental and medical care.

WAACS must enroll, in person, at recruiting stations where WAAC officers are assigned. This country has 52 main recruiting stations, 246 substations. WAAC officers are now stationed at 59 of these stations. Ask at any postoffice or Army headquarters about which of the WAAC-manned stations is nearest you.

WAVES: This branch of the U. S. Naval Reserve started with an initial plan for 1,000 officers, 10,000 enlisted women. The try-out was so satisfactory that the Navy now says it will take on as many as are needed. The purpose of the WAVES is to free men to go to sea, and their job qualifications are accordingly the same as those of the enlisted men and officers they are called upon to replace.

The technical nature of many of the Navy positions to be filled is indicated by the type of education and experience listed as desirable. Especially wanted are women good in such subjects as accounting, aeronautical engineering, astronomy, business statistics, civil, electrical, mechanical and radio engineering, electronics, mathematics, metallurgy, modern languages, physics. Other working knowledge which might help includes architecture, business administration, chemical engineering, chemistry, commerce, economics, English, finance, geography, geology, political science, history, industrial engineering, journalism, library science, mineralogy, psychology, and transportation. Experience listed as desirable includes supervisory jobs in telegraph and cable offices, and maintenance work on teletype machines. Also asked for are licensed radio operators, ultrahigh frequency engineers, lexicographers, typewriting teachers, statisticians, business machine demonstrators, junior executives, and personnel supervisors. The first training schools opened were in radio, storekeeping, and Navy clerical work.

Qualifications.—Must be a citizen. Must pass physical and aptitude tests. Must have no children under 18 years of age. May be married, but not to a man in the armed services. After training period, may marry anyone but a Navy man and retain her status as a Naval Reserve.

Enlisted WAVES must have at least a high school or a business school diploma or have taken business school courses supplemented by experience comparable to a high school education. Ages 20 to 36 are eligible.

Officers must be graduates of an accredited university or college, or must have had two years of administrative or technical experience in business or professional fields in addition to two years' college. Age must be not under 20, not over 50.

Special advantages.—The technical training which the Navy gives is likely to prove a great employment asset after the term of service is over.

Pay.—Regular Navy salary scale for the position occupied. Enlisted WAVES receive subsistence and quarters allowance of $2.75 a day in addition to a monthly base pay which ranges from $50 a month for an apprentice seaman to $126 a month for a chief petty officer. Officers receive rent and subsistence allowances in addition to the following annual base pay scale: Ensign, $1,800; Lieutenant Junior Grade, $2,000; Lieutenant Senior Grade, $2,400. A cash allowance is made for uniforms at the time of entering the service—$200 for enlisted women, $250 for officers.

Apply in writing, stating age, educational background, and experience, also marital status, age of children, and husband's occupation to the Director of Naval Officer Procurement in your Naval District. Inquire at your post office for the nearest Naval Officer Procurement Station.

WAFS.—This experimental auxiliary aviation unit, recruited on a Civil Service requirements basis and not created by Act of Congress as were the WAACS and the WAVES, is starting with about 40 active women pilots and 10 women engaged in administrative duties. Something of the large numbers of women pilots from which such an air auxiliary might eventually draw is shown by the fact that 3,500 women pilots have been accepted in the Civil Air Patrol organized a week before Pearl Harbor to work for Army and Navy. These CAP women pilots are presumably on their way to higher qualifications. A women pilot must be thoroughly qualified to be able to join the WAFS.

Qualifications.—Must be a U. S. citizen between 21 and 35 years of age, have a high school education, possess a commercial pilot's license with 200-horsepower rating, have not less than 500 hours of logged and certified flying time, and have had cross-country flying experience.

Pay.—$3,000 annually, quarters provided.

Apply in writing to the Air Transport Command, War Department, Washington, D. C.

Army and Navy nurses.—All qualified nurses who can possibly do so should feel it their patriotic duty to serve with our armed forces in this critical time in the world's history. The Army must recruit 2,500 nurses a month, the Navy 500. That means that at least 36,000 graduate nurses a year must leave civilian posts to care for soldiers and sailors. Nursing is woman's primary and traditional job in war time. Although she is not subject to draft, it is as much the duty of a qualified nurse to serve her country as it is for a man of similarly valuable training to enter the armed services.

Qualifications.—Must be a graduate, registered nurse with at least three years' training in an accredited nursing school; must be between 21 and 40 years of age; must pass physical tests. Navy nurses must be unmarried. A rule went into effect on October 1 that nurses in the Army who marry will be continued in active service for the duration of the war and six months thereafter at the discretion of the Surgeon General. A married nurse, however, may not join the Army Nurse Corps.

Special advantages.—All nurses go in as officers—Second Lieutenant in the Army, Ensign in the Navy. If a nurse has aptitude in a special field, such as surgery or anesthetics, she is likely to be put into that field. Nurses with experience as hostesses for the commercial air lines are wanted for air ambulance duty. If an Army nurse has supervisory experience, she is likely to be advanced to First Lieutenant, and some even become Captains. Only two Army nurses are commissioned officers, the commander of the Corps is a Colonel, her assistant a Lieutenant Colonel. The superintendent of the Navy Nurse Corps is a Lieutenant Commander and her assistant is a Lieutenant. Army nurses actually share the fortunes of war with the U. S. troops wherever they go, and there is a good chance for foreign service for those who volunteer for such posts. For both Army and Navy nurses, opportunity for a continued interesting career is likely to open in the reconstruction work which must follow the war in all parts of the world.

Pay.—Base pay is $90 a month. Promotions in rank in accordance with Army and Navy regulations. Nurses also get quarters, uniforms, subsistence. If a bill now in Congress is passed, an Army nurse will receive the same pay as an Army officer of the same rank—if she is a First Lieutenant, she will get the same pay as a First Lieutenant in the Army.

Enroll with your local Red Cross Chapter or write for an application blank to the National Headquarters of the American Red Cross in Washington; or apply to your nearest Army Service Command headquarters or write to the Surgeon General of the Army, Washington, D. C. The Red Cross is authorized by Congress to recruit both Army and Navy nurses, check their qualifications, make the necessary initial inquiries. When a summons comes from War or Navy Departments, only a final physical check-up is necessary before going into active service.

Medical technologists.—The Medical Department of the Army employs civilians as technologists as their services are required. The American Red Cross, through its Medical and Health Service, is enrolling women technologists between the ages of 21 and 53. The names and qualifications of all enrollees are submitted to the office of the Surgeon General of the Army. At present there is a great need for more dietitians and physical therapy technicians for service within and outside the continental United States. Write to the Director of Enrollment of Medical Technologists, American Red Cross, National Headquarters, Washington, D. C.

Civilian posts in War and Navy Departments.—The bulk of civilian hirings by the U. S. since 1940 has been for the Army and Navy, largely for jobs outside Washington. This fact is worthy of consideration by women seeking employment, as indicative of where the majority of the jobs are likely to be found. As of June 30, 1942, the date of latest available figures, approximately 275,000 women were working for the War Department, 40,000 of them in Washington, the rest outside. A little over 56,000 were working for the Navy, 14,000 in Washington, the rest outside. These combined totals were well over half the total number of women working in the entire executive Civil Service—about 550,000. Some of these civilian posts are colorfully "with the armed services." For instance, estimate has been made that at least 25,000 women eventually would be employed in the field of radio alone. Others follow more traditional Civil Service patterns for women workers.

Army examples.—Spectacular are the women's jobs performed on the Aberdeen, Md., Proving Grounds where former stenographers, salesgirls, and housewives test out antiaircraft and machine guns, drive tanks, run 15-ton cranes. The Army Air Force has been using 50 experienced women fliers to train cadets at primary flight schools. Further use of women fliers will result from the school to be headed by Miss Jacqueline Cochran who was recently named Director of Women's Flying Training within the Army Air Forces. While many of her graduates will doubtless join the WAFS, they will also be used for various other aviation jobs.

The Army expects to have 25,000 women by the end of 1942 in aviation field work inspecting planes, cleaning and inspecting parachutes, cleaning engines, and towing planes. The Signal Corps was so interested in getting good technicians among upperclass students and graduates of women's colleges that it sponsored a tour of the country last spring, adding 25 young women to the personnel of the Signal Corps Development Station at Fort Monmouth, New Jersey. *The Army never has been able to fill all its openings for women draftsmen.* Women work in War Department plants producing guns, tanks, parachutes, bombs, and clothing, and in arsenals and depots as chemical workers, precision metal workers and distribution clerks.

The Army must depend largely on good inspection to maintain high efficiency. It is depending more and more on women for good inspection. Its inspection jobs are most exacting and difficult, and women have been doing them well. To widen the field for women in this capacity, the Quartermaster Depot at Philadelphia has set up training courses for special technical inspections. Women inspect clothing and fabrics, guns, ammunition and other ordnance material.

Navy examples.—To a lesser degree and with fewer workers, the Navy has departed sharply from tradition. Notable was the admission of women workers in other than clerical positions to both Washington, D. C., and Brooklyn, N. Y., Navy Yards. As of July 1942, women in the Washington Navy Yard working on semi-skilled ordnance jobs numbered 1,023 as against 2,686 women clerical workers there. Employment of the large number of women in overalls was made possible by breaking down technical and precision operations.

Where men in years gone by have spent four years in general apprenticeship, women now learn not a trade but one operation. The Navy also employs women physicists, engineers, architects, designers, mathematical computers, laboratory workers, flight statisticians, photographic interpreters, and inspectors.

Qualifications and pay.—There are no specific educational requirements for clerical, stenographic and office machine jobs, and for unskilled jobs in the war plants. These jobs range usually from $1,260 up to $2,000. Women with administrative, technical, and scientific training can qualify for positions paying from $2,600 on up to $5,600. A very few posts under Civil Service pay as high as $8,000.

How to get civilian jobs with Army and Navy.—Recruitment is by the Civil Service Commission. Go to your nearest first- or second-class post office and consult the Civil Service Secretary there. See "How Civil Service Works" at the end of this section.

Training programs.—While it is the purpose of the Civil Service Commission to furnish the Federal War Agencies with fully qualified personnel, this is now often impossible. It supplies the best personnel obtainable.

To meet the need for trained workers, training courses are given. Congress has provided funds to be allotted to state-owned schools through the Office of Education. With these funds, vocational courses are conducted in which workers are trained for jobs vital to the war-production program. For example, the War Department has arranged through the Office of Education to have training courses set up in various places to train women as well as men for such varied positions as junior optical worker, junior instrument maker, junior lens grinder, apprentice machinist, apprentice tool maker, senior clerk, auto mechanic, inspector of various types of ordnance equipment, storekeeper, engineering aide.

Increased attention is also being given to training-on-the-job for employees not adequately trained, and other training is given for the up-grading of employees to be subsequently assigned to more difficult work.

Other Federal agencies.—While the word "war" is specifically linked with Federal agencies created for the purpose of doing some special war-time job, such as War Production Board, War Manpower Commission, Office of War Information, Office of Economic Stabilization, and Office of Price Control, all Federal agencies are now doing some kind of war work and are therefore war agencies. From now on, employment of women in all these Federal war agencies necessarily must be increasingly on a replacement basis, as men whose duties are not absolutely essential to the war are drawn off by the draft or by volunteering for the armed services. This will mean war-duration jobs for trained women in a great variety of vocations.

Employment opportunities fall into three main categories.—(1) Stenographic, clerical, and office machine jobs; (2) Administrative, technical, and scientific positions requiring specialized training and experience; (3) Highly specialized scientific posts formerly filled only by men, and for which women are now being sought.

Stenographic, clerical, office machine jobs.—These are the jobs, urgently necessary to the conduct of the war, which have drawn thousands of girls to Washington, will draw thousands more. The girls in them are serving their country just as surely as are the boys who go to camp. Applicants must pass written examinations. These tests have become shorter, easier, as demand became more urgent. For a purely clerical position, not even shorthand and typing skills are necessary. Applicants must pass physical tests. Girls who have finished high school, haven't finished college, or who have finished college but have no working experience often can find work in line with the subjects of major interest to them in school. Many government departments now offer in-service training, to help girls qualify for advancement. Those who can type 35 words a minute can qualify as typists; those who can in addition take dictation at 96 words a minute can qualify as stenographers. So great has been the need for stenographers that at one time 60 examiners were sent out over the country to recruit them, give them examinations in their home towns, grade the papers immediately, and put the girls who passed right on the train for Washington.

Typical "in Washington only" positions as announced by the Civil Service Commission September 1, 1942, and their starting salaries, depending on ability, were: addressograph operators, $1,260 and $1,440; alphabetic card punch operator, $1,260; blueprint operator, $1,260 and $1,440; graphotype operator, $1,260; mimeograph operator, $1,260; junior typist,

$1,260; junior stenographer, $1,440; tabulating machine operator, $1,260 and $1,440; photostat operator, $1,260.

Administrative, technical, scientific positions.—For college graduates without experience a large crop of "junior" posts have sprung up in the past few years. A special examination for college graduates was announced by the Civil Service Commission in 1939, and each spring since graduates by the thousands have been examined in about a score of optional subjects, qualifying as junior chemists, junior agronomists, junior engineers, junior physicists, junior economists. Starting salary is usually $2,000.

Almost any professional or business career a woman may have started will find its counterpart in the varied activities of the Federal Government in wartime.

The career woman who wishes to take a war-time position in government should look at the list of open examinations at the local post office to find out whether there is one which fits her qualifications. If so, all she has to do is take the examination and, presuming that she passes it, await an offer of appointment. If there is no examination in which she is interested, she should write a letter to the Civil Service Commission describing her qualifications. The Commission, being the central recruiting agency of the Federal Government, will inform her as to whether there is need for persons with her qualifications and, if so, where the need exists.

In fields of special wartime need, the Civil Service Commission, instead of specifying the closing date for an examination, keeps it open continuously. One such field is nursing. Junior graduate nurses get one year in-service training in veterans' hospitals in the Public Health Service, or in the Indian Service at a starting salary of $1,620 a year; a junior public health nurse starts at $1,800; nursing consultants get $2,600 to $5,600. Architects qualified in design, specifications, and estimating get $2,000 to $3,200; engineering draftsmen, $1,440 to $2,600. Chemists, $2,600 to $5,600. A junior chemist examination at $2,000 was closed to men applicants last June, will be open to women until the needs of the Service have been met. Only women are taking the test for technical and scientific aide at $1,400 to $2,000.

It is usual for positions of this type to be qualified for on the basis of an "unassembled" examination. No written test of set question is required, the applicant being rated on the basis of sworn statements submitted in his application, corroborated by evidence based on investigation and interview. Those who make the most able and best-backed-up presentations of their education and experience are the most likely to get the position applied for. When taking an unassembled Civil Service examination, remember that the person who will read and grade it doesn't know you personally. Where real experience is necessary, state it fully and clearly and offer proof wherever possible. If you expect to occupy a professional position, make your presentation look professional, not amateurish. Each examination announcement states qualifications in great detail and specifies salary.

Highly specialized scientific posts.—The National Roster of Scientific and Specialized Personnel, maintained by the War Manpower Commission, stands ready to list all highly trained women and to make their special qualifications known to any employing agency concerned with the war effort. So great is the shortage in chemistry and some other scientific fields that an effort is being made to search out the "hidden scientists," those who have married and retired from college faculties or high posts in industry. Largest number of women Doctors of Philosophy now registered on this roster are in the field of psychology.

Women university graduates are advised that there is urgent need for women in the following scientific fields: physics, metallurgy, meteorology, geology, radio, and all forms of engineering—electrical, chemical, mechanical, sanitary. A few women engineers are employed at the present time in the Federal Government. The field of engineering will be calling more and more for women to fill vacancies. Women with training in architecture are wanted as draftsmen. Other fields in which openings are occurring are personnel work, public administration, economics and statistics.

How the Civil Service works.—Boards of Civil Service Examiners are located in 5,000 cities—each city having a first- or second-class post office. There are also 13 regional Civil Service offices, usually located in post offices or customhouses. Announcements of current examinations are posted in all these places on bulletin boards. A Civil Service Secretary there will give application forms on request and will assist in filling them out.

Where positions are purely local in nature, announcement of the examination is made locally. This makes possible recruiting of local people for local jobs. Therefore, if you want to work near home, don't write to Washington until you have first consulted your own Regional Civil Service Office.

Thousands of positions, however, are filled as the result of announcements from Washington. If you want to be notified when an examination in which you are interested is next announced, send your name to the U. S. Civil Service Commission, Washington, D. C., or to the Director of the Civil Service Region in which you live. Your request will be kept on file, and when the examination is next announced you will be sent a copy of the announcement and the proper application form. Regional offices are located in Boston, New York, Philadelphia, Winston-Salem, N. C., Denver, Atlanta, Cincinnati, Chicago, St. Paul, St. Louis, New Orleans, Seattle, and San Francisco. By going personally to the Civil Service Commission office in any of these cities, you may obtain expert advice. The Civil Service Secretary in each first- and second-class post office also is informed on the workings of the system and ready to answer inquiries. Any question which is not answered satisfactorily in this fashion may be submitted in writing to the U. S. Civil Service Commission in Washington, D. C.

You will be told when and where to report for an examination by the Civil Service Commission in Washington or its regional office. When your examination has been passed on by the examiners, the Civil Service Commission will inform you of your rating. If you pass, your name is placed on a list of eligibles, arranged in order of the ratings received. The Civil Service Commission does not *give jobs.* Appointments are made by other Federal departments and agencies from the Civil Service list of eligibles.

All positions on the Federal pay roll are quite literally war-time jobs, the ruling being that employment is for the duration of the war and not to exceed 6 months thereafter.

IN THE WAR INDUSTRIES

In the past 2 years, the United States has swung into total war production. Vast new war industries have created new and crowded communities. Older industries have converted to the uses of war. All agriculture has been keyed to the Food for Freedom program.

In the course of this gigantic movement, women by the tens of thousands have gone as workers into the war factories. This was done despite a considerable initial prejudice against them, shown by a survey of employers earlier in the change-over to war production. Women have also gone to work in the fields and orchards.

To manipulate the machines that produce guns, tanks, ammunition, hundreds of thousands of women who have never been in the labor market before will soon be taking jobs. A prediction that 50 percent of the workers on these machines will be women is regarded as not overshooting the mark.

Enormous advances in the proportions of women to be employed in 1943 were foreshadowed by preliminary results of a questionnaire submitted to 1,000 management executives by the magazine, Modern Industry. Exclusive of office employees, the sampling of the Aviation Industry showed 1 percent employed in 1941, 15 percent being employed in 1942, expectation of 65 percent to be employed in 1943; in the Electrical Industry, the percentages ran 6 percent in 1941, 9 percent in 1942, an anticipated 35 percent in 1943; in the Instrument Industry, 10 percent in 1941, 35 percent in 1942, an anticipated 60 percent in 1943; in the Pharmaceutical Industry, 45 percent in 1941, 55 percent in 1942, an anticipated 75 percent in 1943; in the Tool and Die Industry, 2 percent in 1942, an anticipated 20 percent in 1943; Machinery, none in 1941, 10 percent in 1942, an anticipated 50 percent in 1943; Hosiery, 65 percent in 1941, 75 percent in 1942, an anticipated 80 percent in 1943.

Other outstanding evidences of the woman-hiring trend were noted in the Labor Market, publication of the Federal Security Agency. Approximately 21,800 manufacturing, mining, construction, transportation, communication, and utilities establishments reported that of 12 million workers employed in July, 2 million were women. The WPA was quoted as reporting that employment of women in all industries over the past year has risen 2.1 million as compared with an increase of only 1 million men. In Detroit, 26 percent of the persons hired in a recent 60-day period were women. A large producer of radio equipment in New York planned to employ 1,300 women out of a total staff of 1,600.

These women will come from the 4.4 million homemakers in urban life who are under 45 years of age and do not have children under 16; from the 9.1 million such homemakers under 45 who have children under 16; and from the 9.5 million nonfarm homemakers over 45.

Why a factory or farm job.—The woman who takes a factory or farm job has the great satisfaction of knowing that she is each day producing some physical thing which will help win the war. This vital fact has lured many girl graduates of universities and colleges into wage jobs in the war production plants and fields. They argue that they can work with their heads later on, and that while their country needs such service in order that freedom can go on in the world, they will earn a living with their hands and consider it a worth-while part of their life experience.

Orderly hiring.—Fitting women into war industry is a community-by-community job, which must be done with wise forethought to prevent overcrowding, bad housing conditions, outcroppings of juvenile delinquency and child neglect, and frittering away of labor resources.

The War Manpower Commission has been set up by the Federal Government to accomplish use of the entire working force of this Nation—its men, its women, its youth even down to high-school age. This commission also must safeguard children, our future manpower. It is estimated by this commission that something like 6,000,000 additional women must enter the labor force by the end of 1943. These are in addition to 14,000,000 already at work. Not all these women workers will go into direct war production.

But since all civilian production is now being cut to essentials—just what is needed for all of us to carry on the war—all work will become in effect war work. From now on women will also have to "man" many essential civilian services, driving trucks and trolley cars, taking over many of the jobs on newspapers, in radio stations, in telegraph offices, banks, essential retail services.

To assist in this gigantic recruiting job the War Manpower Commission has created a Women's Advisory Committee of twelve members—outstanding women from all parts of the country. They will advise in all matters of major policy as they affect women and the contributions they can make in the prosecution of the war.

General employment policies.—Several governmental agencies concerned with induction of women into industry have formulated some important general guiding policies. Among them are the following:

Equal pay.—The National War Labor Board established as a policy in three cases which came before it the principle of equal pay for equal work for women in war industry. This was hailed by the Federal Women's Bureau as a victory for women workers and for advocates of fair wage policies—a great advance over the situation in the last war. To pay women less than men for the same work undermines the whole pay structure, causing employers to take women on as "cheap labor" and precipitating male unemployment in normal times.

Day care.—The War Manpower Commission has given an opinion that employment by industry of mothers of young children should in general be deferred until all other sources of labor supply have been exhausted. It is granted, however, that there will be exceptional cases in which mothers of young children will be employed—for instance, when the mother's wage is necessary to support an adequate standard of living; when the community is so overcrowded that it cannot house additional workers and must make use of all possible women already there; and when the mother of small children has had special training which will make her immediately and exceptionally useful. In such cases, satisfactory day care for small childern must be set up by the communities. Such day care may consist of (1) *foster family care*, in which the child of a working mother is cared for, under community supervision, by a private family; (2) homemaker service, in which a person is sent into the child's own home to carry on in place of the mother; and (3) by group activities outside the home—nursery schools, day schools, play schools, vacation camps. A Day Care section has been set up by the War Manpower Commission in the Office of Defense Health and Welfare Services to work out the entire problem of safeguarding the children of the women who go into war production jobs.

Pregnancy.—The Women's Bureau and Children's Bureau of the U. S. Department of Labor, in consultation with medical specialists and industrial women, has recommended as a general policy that provisions for maternity care and leave should not jeopardize a woman's job nor her seniority privileges. A minimum of 6 weeks' leave before the birth of a child and at least two months after is considered essential to the welfare of mother and child. It is urged that a woman expecting a child give first consideration to her own health and to safeguarding the health of her child. While some women who are pregnant or have young children may find it necessary to work, the labor market does not justify recruiting them, and they are warned against certain occupations which are especially hazardous during pregnancy, such as work requiring lifting or exposure to toxic substances.

General working conditions.—Women whose lives have been in home and school must become familiar with a whole new working environment. Take the important subject of safety. One college girl said: "Safety is a foreign word until you feel the deadly quality in a plant." Women are working with high explosives. They are working with deadly chemicals. They are working with machinery that could maim or kill. In the war plants' training courses, safety is constantly emphasized. To aid both employers and workers in attaining the best possible working conditions, the Federal Women's Bureau is issuing a series of pamphlets and leaflets. Those issued by the Women's Bureau thus far are: Effective Industrial Uses of Women; Lifting Heavy Weights; Safety Clothing; Hazards to Women in War Plants; Washing and Toilet Facilities; Time for Meals and Rest; Night Work and Shift Rotation. Two other useful publications are When You Eat Out and Work Clothes for Women, which may be obtained from the Office of Information, Department of Agriculture.

War industries employing women.—The list of war industries which women have already entered to a large or small extent includes: Aircraft and Parts; Small Arms and Artillery Ammunition; Agriculture and Canning; Communications; Chemicals (industrial); Chemical Products; Electrical Machinery; Firearms, Guns, Gas Masks, Parachutes; Machinery; Machine Tool and Machine Shops; Radio Parts and Equipment; Rubber Goods (industrial); Scientific and Professional Instruments, Photographic Apparatus and Optical Goods; Surgical, Medical, and Dental Instruments and Supplies; Ship and Boat Building and Repairing; Sighting and Fire Control Equipment; Tank and Auto Parts and Equipment; Transportation; Utilities; Oil Refineries; Mines; Lumber and Saw Mills.

To this should be added the whole familiar and tremendous field of civilian goods and service, since keeping essential civilian life going is part of the over-all planning for war industries.

Women have proven worth.—Two years ago, when little use had been made of women in the war industries, the Women's Bureau of the Department of Labor drew up a list in eight categories of the jobs that women could do. *Now large numbers of women are doing all of these things.*

This list two years ago included: (1) Manipulative skills, such as operating machines, drill presses, milling machines, light punch and forming presses, bench and watchmakers lathes, burring and polishing lathes, light-duty automatic screw machines, and light turret lathes; also assembly work requiring use of hand tools, sheet metal forming and riveting and hand finishing by filing and burring; welding; soldering; electrical work; spray painting. (2) Inspection, including visual, by gage, and by calibration, and checking and testing raw materials. (3) Packing. (4) Factory service, such as production planning and routing, drafting, timekeeping. (5) Supervising. (6) Training. (7) Personnel relations, such as interviewing and hiring women, nursing, and welfare work. (8) General office clerical work.

High-pressure production for two years has proven that women *excel in the tasks that require sharp eyes, suppleness of wrist, delicate touch, repetitive motion, exactness.*

Employment of large numbers of women has also been made possible by breaking down tasks which have heretofore required years of training, or a man's strength, into their component parts and assigning to women the operations they can do.

How to look for a job in war industry.—Military regulations forbid the publication on a nation-wide scale of names of war industry plants or numbers of employees. However, in each locality, the most available industries and the approximate size of their working forces are well enough known to indicate labor opportunities. Where the labor situation is not complex much hiring is done directly by the plants. However, the problems of war have brought to the fore the services of the United States Employment Service. If you are seeking a job in any of the war plants in your vicinity, go to your nearest office of the United States Employment Service and register. If you have no training, you will be referred to training facilities. For the great mass of women's jobs in war production most of the training courses are no more than 6 weeks in duration, many are even shorter. In many plants training is given right on the job. For unskilled jobs there are no educational requirements, but aptitude tests are often given by the Employment Service and have proven most helpful in putting the right person into the right job.

How USES works.—The United States Employment Service is an agency which for the past 9 years has been serving both workers and employers, fitting people to jobs throughout the United States. Its offices were State-operated until January 1, 1942. Then the many State-operated employment services were brought under one central control at Washington because of the necessity of a national, coordinated effort to locate, train, and place in the war industries the rapidly increasing numbers of men and women required for mass production. The USES functions through 1,500 full-time offices and twice that number of part-time offices.

The Employment Service urges every employer to give it, far enough in advance to enable it to find the workers he needs, a list of job-openings which he expects to have at any given time, and the requirements for each job by occupation and skill. It asks the employer not to advertise for workers and particularly not to hire workers away from other employers, but to give the Employment Office a chance to send to him qualified people who are unemployed or employed in a nonessential capacity. Every other month, officers of many of the important war establishments sit down with representatives of USES to size up labor needs.

The Employment Service keeps in closest working relationship with all labor-training programs. Knowing the employers' needs, it can give the right recommendations on training applicants to fill those needs, and can refer applicants to training courses most likely to result in getting jobs.

To each worker the Employment Service says: "You can speed up the war production of your country by getting the job you can best do and which needs most to be done. Your local United States Employment Office exists for the purpose of fitting workers to jobs."

War Training Programs.—Women who have had no experience whatever in running machines must become lathe operators, riveters, drillers, welders, metal workers of all types and descriptions. That in itself means one of the biggest training programs on which this Nation has ever embarked.

So closely is the pressing need for training linked up with the whole question of man and woman power, that the vocational training functions of the Federal Government have been placed under the War Manpower Commission, and the U. S. Office of Education maintains a representative in each of the eleven regional offices of the War Manpower Commission.

Women are welcomed into each of the three great training programs which help workers to prepare for and progress in war jobs.

By far the greatest of these programs is *Vocational Training for War Production Workers.* In the past 28 months, 3,100,000 persons have been trained for war work under this U. S. Office of Education program in 2,500 vocational schools. Women did not enter these courses in any numbers until about 9 months ago, and only 140,000 of those trained have been women. By and large, these were mostly women already used to industry who were refreshing old skills or changing over from peace to war operations. From now on, the numbers will increase rapidly, and will consist more and more of women absolutely new to industry. Classes are of high school level, and are concentrated chiefly on machine manipulations, assembly, and inspection work. As of August 31, enrollment of women in these vocational training courses was 61,826 of which 45,546 were being trained to take jobs and 16,380 were studying to advance themselves. Women constituted around 26 percent of those training to enter industry. It is estimated that 100,000 women will be enrolled in vocational training courses by December 1942.

The second of these programs, the *Engineering, Science and Management War Training Program*, offering intensive courses of college and postgraduate character, is conducted in some 175 colleges and universities by the U. S. Office of Education. The women taking these courses naturally will be few in comparison with the great numbers to be trained in the vocational schools. But women who are qualified for such specialized training should take advantage of the unusual opportunity, created by war necessities, to obtain higher education in classes offered free by the Government. These courses cover a great variety of subjects, often keyed to local needs. In California, for instance, a woman might train as a petroleum inspector and go to work in an oil refinery. In the East, she might be trained to become a detailed draftsman, a physicist, or a chemist. If she has had the education and the aptitudes necessary to qualify for some of the higher courses, she might, as one instance, train for and get a job in aerodynamics. An estimated 13,000 women are currently enrolled in the ESMWT program.

Many industries conduct *In-Plant Training Courses*, set up by the industry itself with the expert advice of the War Manpower Commission. Admission to many of these courses is no more difficult than showing promise in an aptitude test. In a few of the skilled trades, such as printing, women also enter on the longer apprenticeship programs and their numbers have been somewhat increased as a result of the war.

Women have been admitted in large numbers to a within-the-government training program. In government-owned and government-operated arsenals, air depots, navy yards, quartermasters' depots, courses are organized for new workers and those seeking promotion. The U. S. Office of Education conducts these courses at the request of War and Navy Departments.

With the opening of high schools and colleges in September 1942, the whole curriculums were newly organized for war purposes.

The American Council on Education recently issued a bulletin urging college girls to take enough mathematics and science to provide for specialization in work needed for war, and to take courses not because they want them but because they are useful in the war effort.

"Production cannot wait," this bulletin stated. "Under present conditions, women students should plan their individual programs to equip them to fill a position at the end of any semester in case the crisis becomes so acute that the national interest demands their services."

Fields in which women were advised to take specialized training were: Health, including physicians, dietitians, nurses, laboratory technicians, experts in public health, bacteriologists, chemists, psychiatric social workers, occupational therapists, physiotherapists, and pharmacists; Diplomatic Services and Special Investigation, including linguists, mathematicians, and specially trained secretaries; Scientific Research, including physicists, chemists, geologists, mathematicians, agriculturists, and home economists; Business and Industry, including engineers, mathematicians, statisticians, accountants, and secretaries; Schools and Colleges, including teachers, nursery school experts, and psychologists.

Training for physical fitness was also emphasized as follows: "The student should be constantly reminded that illness slows down her efficiency, uses up the skill of doctors and nurses who are urgently needed for war services, and consumes valuable drugs and medical materials. In physical education departments, student health offices, and food services, the college has the facilities for a concentrated physical fitness program."

A complicated task.—The USES has catalogued more than 1,800 war occupations suitable for women, and about 900 nonwar occupations suitable for women. Matching the requirements of thousands of different occupations with the qualifications or potentialities of millions of workers is obviously a task requiring all the skill and information which the Employment Service has amassed in its years of experience. For instance, if an employer changes from a peacetime industry to the making of some type of munitions, he may not even know what skills to look for in his workers. On the basis of similar change-overs in other places, the U. S. Employment Service can give him detailed job descriptions, training data on all the occupations involved, information on which occupations are suitable for women, and a list of "job families"—jobs that are related to the ones which he has had in his plant and from which he can make a transfer of skills. It also may give applicants aptitude tests, so that the employer will know what applicants may be most quickly and satisfactorily trained.

Geographical areas of opportunity.—Women war workers are not needed or wanted equally in all parts of the United States. For example, a current list of industrial areas in which substantial opportunities now exist or are anticipated includes the following:

Springfield, Mass., and Bridgeport, Hartford, New Britain, and New Haven, Conn.

Buffalo, Elmira, Sidney, and Binghamton, N. Y.; Elkton-Perryville and Cumberland, Md.; Hampton Roads, Va. Also Washington, D. C., for Government workers.

Detroit, Mich.; Louisville, Ky.; Ravenna-Warren and Akron, Ohio.

La Porte-Michigan City, Ind.

Childersburg and Huntsville, Ala., and Aberdeen, Miss.

Little Rock, Ark., and Tulsa, Okla.

Texarkana, Tex. and Ark.

Ogden, Utah.

San Diego, Calif.

Women who live in these places might find the present an opportune time to register at the local employment offices. Of course there are many other localities where women workers are wanted. In regions of little demand it may take some patient waiting to fit into war production but the list of areas of opportunity will inevitably increase.

How Women Fit Into Typical Industries

Representative of the way women are helping win the war on the production fronts of industry and agriculture are the following summaries of large woman-employing industries:

Aircraft and parts.—In October 1941, only 2,000 women were on the production lines in aircraft assembly plants. After Pearl Harbor, that number quickly doubled. By April 1942, there were about 17,500 women in the principal plants, yet in nearly half the plants women were still less than 5 percent of the production workers. Since then they have been hired in increasing proportions. By August, approximately 63,000 women were working in aircraft assembly, engine, and propeller plants.

As a conservative estimate, the Women's Bureau states, at least one-third of the jobs in the aircraft assembly plants could be done by women. X

Girls in airplane assembly plants install powerlines, electrical systems, pedals, control parts, fittings. They rivet surfaces together. They sew the fabrics. They are experts at drilling holes. They do subassembly with handtools. They hand-finish sheet metal parts. They inspect at many stages of the work. They do the "spaghetti work" behind the instrument board, assembling the wires that are the life-lines of the bombers. They work with plywood; help in the paint, heat-treat, and anodizing departments.

Entrance rate of pay is the same for men as for women in almost all the assembly plants, and promotion is on the same basis with rates set according to the job. The entrance rate is usually 60 cents an hour. After three months, it goes up to 75 cents an hour. Top rate is $1.10 to $1.20 an hour. Highly specialized jobs may rate more pay.

A great opportunity for women's employment exists in the subassembly plants, because the parts and plane sections are comparatively small.

Opportunity for advancement in the airplane industry is good. A large proportion of women can be upgraded through training to fill positions requiring high degrees of skill and responsibility.

Ammunition.—By far the largest woman-employer among the major war industries is ammunition, including artillery ammunition and small arms ammunition. In some of these plants, many of which have been built in the east, middle west, and south, women can do from 70 to 90 percent of the jobs, and the estimate is that approximately two-thirds of the labor force of the entire industry may be women. It is estimated that 200,000 women will be at work in ammunition plants by the end of the year 1942.

Jobs that women can do in the making of artillery ammunition include: Machine operations on metal parts, and their assembly and inspection; machine operations on detonators, fuze primers, boosters, etc., and their assembly inspection, loading, and packing; body and head machine operations on propellant primers and their assembly and loading; projectile manufacturing in which women work on the lighter munitions; light machine operations, inspecting and packing of cartridge cases; cleaning threads and miscellaneous light jobs on projectile loading and the lighter jobs in case loading and assembly; and practically all bag-loading operations. Because of their finger dexterity and patience, women are particularly adept at working with primers, detonators, and fuzes. In checking dimensions and weights women use micrometers, gages, and scales. An extreme instance of precision work is the job of a woman who uses tweezers to pick up very small paper disks which she weighs to make certain only one disk at a time is being used in loading the percussion elements for a primer.

Training.—Most of the training is done within the plants. A few women instructors and supervisors have been sent to Government arsenals for training.

Pay.—The principle of equal pay has not been effective in this industry. Beginning rate for a woman is 45 or 50 cents an hour. Top pay is usually $1.10 to $1.20 an hour.

Agriculture.—Girls driving trucks and tractors have suddenly become a familiar sight to those who travel American highways. Women helped get in the 1942 fruit crops of the west coast. Women helped get in midwestern crops. War Manpower Commission statisticians estimate that 70 percent more women were working on the farms in the summer of 1942 than in the summer of 1940.

This was because more than a million people had left the farms, families pulled to new industrial areas, men gone in the draft, girls gone to war jobs. More will go. Yet crops must be planted, cared for, and harvested to feed our civilians and our armies, and to feed our allies. In the face of labor shortage, production must be stepped up.

The Department of Agriculture has outlined to Congress five necessary steps to meet the farm labor shortage: (1) Keep on the farms as many experienced managers as possible. (2) Recruit more industrial labor in the cities. (3) Use the services of *more women* and young people, training the inexperienced. (4) Develop efficient ways of transporting migrant farm workers to areas where they are needed. (5) Take good farmers off poor land and put them on good land.

The first women to go in numbers to the field have been the farm women, already familiar with farm ways, and they will be used more and more next year. But women from the cities will also be needed on the farms. Their use will depend upon the extent to which training and transportation can be provided.

The War Manpower Commission, in joint operation with the Department of Agriculture, has taken over the important task of getting help to the farms when and where it is needed. For farm and food-processing jobs, just as for war factory jobs, hiring is done through the United States Employment Service. In all of the 1,500 employment offices, farm placement people are available for advice, and in addition, the USES has opened thousands of volunteer farm labor recruiting offices.

In many towns and cities the Government has opened night schools to train women and girls to operate farm machines. A large harvester company has organized night classes at dealers' headquarters all over the grain belt to teach girls how to run tractors. High schools and colleges serve as training centers. On farm as in factory, training in the less-skilled type of labor is often on the job, the experienced teaching the less experienced.

Pay.—An effort is being made to bring into agriculture the same sort of orderly pay-scale arrangements that prevail in other industries. Volunteer wage standards should be maintained for all farm workers, and this is being done through setting up wage boards which hold hearings to decide the prevailing rate of pay. The pay scale varies in different sections of the country. Under Federal ruling, men and women engaged in interstate industries must be paid at least 30 cents an hour.

Working conditions.—Employment of women on farms brings up problems of health, housing, and transportation. These are discussed in a booklet which may be obtained from the Federal Women's Bureau, "Guides for Wartime Use of Women on Farms."

Special war crops.—Agriculture, like industry, has its unusual war jobs. For example, the guayule rubber industry of Salinas County, Calif., was faced with a male labor shortage and tried out a hundred women as weeders. It worked so well that eventually more than 1,700 women were recruited from a 30-mile radius around Salinas to save the young guayule crop.

Communications.—In the telephone, telegraph, radiotelegraph and cable field, labor has become scarcer as messages mounted. This has resulted in appeals to the public to send only necessary messages and in using of women and girls for jobs previously done by men and boys.

At the end of 1940, over 60 percent of the 300,000 employees of telephone companies were women, mostly operators and clerical employees, but some in higher posts. There were also a few women lawyers and engineers, and around 250 draftsmen, a few supervisory foremen, and some 30 maintenance and construction workers. In 1941, telephone personnel had to be increased by 57,000 and 74,000 more hirings were necessary to fill vacancies. Far larger hiring figures will be tallied in 1942. While the telephone companies were still expressing a preference for men in their higher-paid posts, they were gladly granting women a place in the technical telephone field, when qualified women applied.

Radio has been a young man's industry, and so especially susceptible to the draft. Of the 5,500 qualified radio engineers, more than 1,000 have already entered army and navy and their recruiting continues by nationwide broadcast. As a result, women's colleges, among them Vassar, have opened training courses for girl technicians.

Finding it harder and harder to recruit boys for messenger work, Western Union began recruiting girls, now has 2,000 of them at work in cities of great message-load. Eighty are used in Washington, D. C., to carry messages between downtown office buildings and Government departments. Their use is considered very successful. They have to be 18 years old. They get $100 a month. They buy their bicycles from the company as they work, paying a third down and thereafter $1.25 a week.

Chemicals and chemical products.—This industry has a marked preference for men, yet inability to get men workers has caused the employment of women. It is estimated that essential industrial needs for graduate chemists and chemical engineers during 1942 will be from 2,000 to 3,000 more than the schools can put out or that otherwise will become available. Women as well as men are admitted to the chemistry courses offered by the Federal Government and described earlier in this article under the heading War Training Programs.

Machinery.—Women are beginning to enter the various branches of machine manufacture. Of 47 occupations in metal working industries in which labor shortages are expected to develop, 17 are wholly suitable and 22 are partially suitable to women. However, in 7 major New England firms, only 7 percent of the working force was women prior to September 1942, as against 45 percent women in the British machine tool industry. The percentage was even less in midwest industries. A large increase in women hirings was expected in the last months of this year to replace men called up by Selective Service.

Rubber goods.—Women constitute more than a fourth of the industry's labor force. Several large companies each employ more than 1,000 women, mostly on the production line. In Akron, Ohio, women will constitute 70 percent of the future hirings. They are employed in making life rafts, landing boats, flotation bags for planes forced down at sea, rubber vests, self-sealing gas tanks, and parts for gas masks.

Scientific, optical, and surgical instruments.—Women are adept as instrument makers because of the precision required. The proportion of women in the plants which make the instruments which direct weapons runs as high as 50 percent. Women have also been taken on extensively for making dental, surgical, and optical instruments. Special machining of dental burs and breaches in about 150 styles is done almost exclusively by women. They also test and inspect the sensitive pieces that go into gyroscopic instruments.

Shipbuilding.—Women are being used more and more in the shipyards, mostly as shipfitters' helpers, subassembly welders, and painters. At one Brooklyn Navy Yard they are now being used as chauffeurs, welders, burners, and small machine operators. They are also sewing in the sail lofts, doing repair jobs, and of course serving as clerical help.

Transportation.—In 1940, the *railroads* employed 47,000 women, mostly secretaries, stenographers, typists, office machine operators, and switchboard operators. With increased transportation loads traveling over all the railroads of the country, their numbers have materially increased. So have the numbers of women in the better paid positions—passenger traffic representatives, freight traffic representatives, train stewardesses, city ticket agents, station agents, timekeepers, accountants, cashiers, bookkeepers, car tracers, rate clerks. In 1940, 400 railroad women got salaries of more than $2,400; 2,300 got salaries of more than $2,000. Now women are beginning to be employed in the more unusual railroad jobs, replacing men from the day-laborer level on up to ticket agents in sizable cities. In a few cases they are crossing flagmen and signal tower operators. They load and arrange materials in railroad storehouses, keep records, load and unload supplies. In roundhouses, they work as engine wipers, and pick up the scrap iron and wood left by repairers. One of the eastern railways has started training women college graduates as ticket agents and administrators in the traffic department. The Women's Bureau of the Department of Labor has served as consultant on standards for working conditions for women taking railroad jobs.

Air transport offers the modern miss a modern method of making an interesting life and livelihood. Twenty percent of the employees in air transport are women. Thirty percent will be women by the end of the year. Their stewardesses no longer have to be trained nurses, but still must have had one year of college. Other air transport jobs: making pressure charts, housekeeping both aircraft and station, secretarial and clerical work, giving information to the public.

Motor transport—driving commercial buses and trucks—employs very few women, could employ more. Women are now driving trucks carrying jeeps and ambulances from Detroit to seaboard cities; a few women drive buses.

A recent Federal report estimates there will be 300,000 women in transportation before the war ends, an increase of 180,000 over the present 120,000.

Civilian goods.—Our armed forces are large, but they are still small in number as compared to the numbers of civilians. Even though the armed forces require about three times as much food and clothing when in this country, and about ten times as much on foreign duty as do civilians, even though the metal industries are largely converted to war production, it still requires more workers and more plant facilities to feed and clothe civilians than to care for the armed forces. This work must go on. When men are called into service from these industries, women must fill in the production gaps.

In the making of men's suits and coats, women constitute 60 percent of the workers and that percentage will go up. In the women's garment trades, women already constitute between 80 and 90 percent of the workers. In the making of underwear and the knitting of stockings and socks, women are doing well over half the jobs. The percentage of women in the shoe industry has risen from 40 to 50 percent and will go higher. Necktie and cap making come very close to being all-woman industries. In manufacturing other than munitions, the working forces have in general been about half men and half women since 1940. From now on, the weight will increasingly fall on the women's side of the balances.

The needle-work trades, however, have presented a special problem in that the change from peace to war industries has thrown many skilled women out of jobs, particularly in New York City.

IN BUSINESS AND THE PROFESSIONS

As the Army and Navy inducts into military life more and more doctors, dentists, nurses, teachers, bank tellers, newspaper reporters, and other business and professional people, some one has to take their places in civilian life. War also causes the creation of new professional jobs such as the specialist who must set up new day care programs for young children of women working in war factories and the paid personnel with service organizations such as the American Red Cross and USO.

Each community and section of the country can compile its own list of professional opportunities opening to women through the exigencies of war, enabling them to do a trained service for community and country, and thus free another person for active warfare or war production. For the country as a whole, the Institute of Womens Professional Relations, Connecticut College for Women, New London, has conducted research, repeatedly referred to in these pages.

A few examples of war jobs for women in business and professional fields follow:

Banking.—About 65,000 women are now employed in banks, about 25 percent of the total personnel. They are there because they proved their value to the financial world during the last war. Prediction is that if this war should continue another two years, their numbers will be doubled. A general high school education is required. Girls start in the junior clerical classification and work up under a system of promotion in the ranks made possible by special training courses. The American Institute of Banking offers a total of 18 courses in law, economics, accounting, investments, trusts, credit, and other financial subjects.

Day Care.—The nursery school specialist and child psychologist will soon find her special training in great demand as communities organize for the day care of the children of women who are working in war plants.

With some stimulation from the Government, particularly through the WPA nursery school program, the number of nursery schools in this country has more than trebled since 1936. But their total is still so small as to be the merest sampling of what has to be done to make possible the actual physical care of children whose mothers are doing war work and to start young children of this country on the education they will have to have as a new generation faced with the task of remaking a war-shattered world. Already requests are coming to this Government from the other American republics for trained nursery school people. Some 200 colleges and universities of this country have reported that they maintain nursery school or kindergarten laboratories, some as part of academic courses and some in connection with colleges of home economics. High schools also, as part of Victory Corps activities, are setting up nurseries to serve the double purpose of caring for children of women in war plants and to give young girls taking home economics practical laboratory experience in the care of children. Some high schools already were maintaining nursery schools as laboratories for young girls taking courses in family life education or preparing for vocational work as nursery assistants. After-school care for older children brings in another large field. While the national day care program is now only in its beginnings, it seems certain to offer broad opportunities for trained supervisors, psychologists, nutritionists, women trained in music, art, construction, gardening, dramatics, nature lore, and physical education.

Women who are qualified for this work and are seeking a job in this field should apply to their State or local Department of Education since these agencies will have charge of personnel of nursery schools established with federal funds. A few experts will also be employed by State Welfare Services. Cooperative community nursery schools are often started by individual enterprise, women pooling to supply the salaries of trained supervisors for their children.

Education.—Shortages are apparent in teaching fields from which men have been drawn by war services. They also appear where women have taken better paying jobs in defense industries and government service.

Probably the most acute shortage is in small rural schools. In more than a fourth of the States, teachers' salaries are under $1,000 a year, as against $1,260 to $1,440 at starting salaries for clerical and typing jobs in government. The drainage off of teachers and potential teachers into war jobs has resulted in the issuing of emergency permits to teach in approximately three-fifths of the States. Since the rural school, which is the very bed-rock of our free educational system, employs about half of our teachers, girls qualified as teachers by high school education and additional teacher training could engage in no more patriotic war service than the peacetime job called teaching school.

In village and city elementary school and high schools the greatest shortages in order of the acuteness of the need are listed in a federal survey as follows: (1) Teachers of agriculture. (2) Teachers of industrial arts, and of trade and industrial subjects. (3) Teachers of general science, physics, and chemistry. Half the States have reported shortages in these subjects and no State has reported a surplus. (4) Teachers of physical education. Some men teaching these subjects who have been called into the armed services have reported that women could take their places in an emergency. (5) Public school nurses and teachers of health subjects. If the war continues long, tragic conditions are unavoidable unless there is planning and preparation to prevent nurse shortages and to encourage fitness programs. (6) Mathematics teachers. Women well versed in mathematics are wanted as teachers, especially in the smaller places. (7) Teachers of business and commercial courses. Here the shortage is likely to increase because of the numbers of business-trained women going into government and war industries. (8) Home economics teachers. This is a shortage that tends to grow in spite of the fact that married women whose husbands have been called into service are returning to their former vocations in the home economics field. The war emphasis on nutrition has given great impetus to teaching of home economics.

In spite of all these shortages, there are surpluses of teachers in some of the big cities, and in a few subjects. In twelve States, surpluses have been reported in teachers of history and social studies. Seven States have reported a surplus of English teachers and none has reported a shortage. Four States have surpluses of foreign language teachers. In New York and some other large Eastern cities, there are surpluses in almost every field.

To apply for teaching jobs—

In these 15 States, address the State Department of Education Placement Service: Alabama, Delaware, Florida, Idaho, Maryland, Maine, Massachusetts, Minnesota, Mississippi, New Hampshire, Oklahoma, Pennsylvania, Texas, Vermont, and Wyoming.

In the following 15 States, call on the free placement service provided for public school teachers by the U. S. Employment Service's State office: Arkansas, Colorado, Georgia, Idaho, Indiana, Iowa, Kansas, Kentucky, Maine, Missouri, Nebraska, North Dakota, South Dakota, Utah, and Wisconsin.

In these seven States, the State Education Association provides a free placement service: California, Michigan, Montana, North Carolina, North Dakota, Oregon, and South Carolina.

Many teachers still get jobs by individual application, dealing directly with Boards of Education. There are also more than 80 private teachers' agencies in this country. The usual charge is 5 percent of the first year's salary in the position obtained through them.

Medicine.—The shortage of civilian physicians should stimulate more women to enter and to return to the medical profession. However, at least one State medical school has closed its doors to women "for the duration." In 1940, there were 7,470 women physicians in the United States and all but 6 of the 77 medical schools admitted women. The training is long and aruous, 4 years medical school and 2 years internship in addition to 4 years college. Internships, residences, and fellowships for women in the medical field have tripled in recent years. Women have made an especially strong showing in the field of mental hygiene and psychiatry. Of women graduated as physicians from accredited medical schools, only 1 in 3 continues a life career in active practice. Women physicians who have married and retired from practice should if possible, take refresher courses in order to be able to serve their country and their communities in the war emergency.

Nursing.—Because of the dire need of this Nation for nurses, in civilian life as well as in Army, Navy, and public health services, Congress has appropriated $3,500,000 to stimulate nursing education. Present facilities to train nurses will be enlarged, new training centers will be established in connection with colleges and universities in strategic areas throughout the country. Every girl who is qualified to become a nurse is urged to enter training. About 20,000 additional students are needed for the January and February 1943 classes to complete the 55,000 quota needed before July 1, 1943. There is every possibility that 65,000 students will be needed for the school year 1942–43.

In addition to the new crop of nurses which must be coming on, retired nurses should return to duty in the hospitals of their communities. It is estimated that approximately 100,000 nurses have left nursing for other work or for marriage, and are lost to the nursing registries. Refresher courses are offered to facilitate their return to active duty.

Enough women must go into nursing *now* to replace the nurses called into war service, to help shoulder the added burdens of the lessened numbers of doctors, to safeguard the health of workers in the war factories, to help teach the people better care of their health so as to relieve the overload on hospitals and doctors, to check up on children in the schools and prevent the spread of diseases which break out under wartime conditions, to educate the public in mental health so as to lessen the psychological impacts of war.

Special advantages.—Nursing has become a field which offers many interesting vocations aside from bedside care of the sick. The trained nurse of today has a profession which can carry her forward into more and more interesting fields of service. She can go anywhere and find opportunities. She can marry and raise a family with the serene knowledge that she has a skill which could be brushed up and put to work at earning a living at any time anything happened to her husband. She knows she is helping humanity when its need is greatest. In the post-war reconstruction period, nurses will also have great opportunity for foreign service in all parts of the world.

Pay.—The institutional nursing, nursing education, and public health nursing fields offer salaries from $2,500 to $6,000 yearly and even higher.

For further facts about nursing, write Miss Florence Seder, National Nursing Council for War Service, 1790 Broadway, New York City.

Pharmacy.—This is another of the many fields necessary to the safeguarding of civilian life in which women may be used to replace men called by their country. Opportunities are opening in the great pharmaceutical laboratories as well as in the retail drug field. In order to be able to take an examination as a registered pharmacist, it is necessary to be a high school graduate, to be a graduate of an approved school of pharmacy, and to have had one year of practical experience. Salaries are around $30 and $40 a week. Positions may often be obtained through the school of pharmacy from which the woman is graduated.

Journalism.—In this war, as in the last one, more women are working in newspapers and general writing fields as a result of men going out into fighting fields. One Tennessee daily has an all-woman staff. A newspaper in a midwestern city tried an all-girl copy desk. Girls instead of boys are being used to run copy. The press associations are hiring more women reporters. But there is no real labor shortage, and specialized training is required for positions which still are comparatively scarce. Positions are obtained by individual application.

War work organizations.—In the last war the expression that a young woman of professional training had gone into war usually brought visions of Salvation Army lassies, Red Cross canteen workers, and uniformed girls on duty in the recreation rooms of the "Y." These same organizations under somewhat different plans and conditions give career-opportunities to women today.

American Red Cross.—In this war, the American Red Cross is the only organization permitted to send its members to serve with the troops in foreign countries. Whereever our fighting forces go into foreign lands, the Red Cross military and navy welfare service goes along to organize recreation programs in clubs and hostels and to make life pleasanter for the men in Army and Navy hospitals. In this country, this Service functions only in the hospitals of the military camps and naval bases. Women who enter this work must be between the ages of 25 and 40, must not have husbands in the armed services at the time they take the job, but are not dismissed if their husbands later enter military duty. A high degree of training and experience is required. Overseas positions fall into three categories: (1) Recreational work, requiring trained skill in music, dramatics, the arts, outdoor sports, and organization experience.

(2) Medical social workers in the hospital recreation program, requiring both recreational skills and scientific training in occupational therapy. (3) Secretarial help. Service in this country includes only the last two categories. Salaries range from about $100 to $150 a month for secretaries on overseas duty and $135 up to $225 for social and recreation work personnel. Apply to Personnel Director, American Red Cross, Washington, D. C.

United Service Organizations.—The USO comprises six of the voluntary organizations remembered for gallant service records in the last world war—Salvation Army, Y. M. C. A., Y. W. C. A., National Catholic Community Service, Jewish Welfare Board, and National Travelers Aid Association. As well as offering recreation to soldiers in transit and on leave throughout this country, the USO has an Overseas Division which sets up recreation centers in such outlying territories as Alaska and Hawaii at the invitation of Army and Navy. Each of the six agencies hires and trains its own workers. The whole nation knows the club directors and the assistant club directors of the USO who organize the entertainment of servicemen and the athletics of factory girls, and give advice on personal problems. Applicants must be at least 23 years of age, be a U. S. citizen, have social service and recreation training and experience, and have excellent physical health and stamina. Apply to the personnel director of the individual agencies through National Headquarters of USO, 1630 Empire State Building, New York City.

AS VOLUNTEERS

Modern warfare has created a new necessity for community protection. Civilian population as well as fighting forces are targets for enemy bombing. Cities must think in terms of how fast an airplane can fly over the top of the world as well as about how long it takes ships to cross the ocean. The interior of Arsenal America is filled with munitions and materials which must be guarded from sabotage. The fire-watchers' tower in the forest fastness has to have its counterpart in battalions of trained eyes in the towns. Women who don't go off to war must be increasingly the very backbone of this work.

There are in this country about 400 local areas, involving more than 1,000 communities which might be termed critical defense areas because of the concentration of military personnel or industrial war workers. In most of these places, population has risen rapidly, outrunning community facilities such as schools, recreation centers, and health clinics. Women have swung wholeheartedly into furnishing community services to these areas and must continue to do so as the need is still great.

The things which happen to human beings in war have been more terrible under the onslaught of the Axis than ever before in history. The victims of Germany and Japan must be helped. The American people have to be schooled in a new stamina to conquer a barbarism which by all standards of ordinary common sense is inconceivable.

The field of working with the problems of human beings has been pioneered by women, and in that field they are preeminent. Where their good works were once done in a casual and individualistic fashion, a new spirit of professional pride in the job has sprung up. The woman volunteer of today, whether available for full-time or part-time war work, takes training, keeps her work up to a high standard of quality and dependability. Volunteer service is one field in which women actively may help to hold some of the social gains made in the past decade.

Office of Civilian Defense.—The OCD divides into two main branches, The United States Citizens Defense Corps and the United States Citizens Service Corps. Each must have its dependable staff corps capable of putting in long hours in an emergency.

Citizens Defense Corps.—In this corps, which is organized to minimize the effect of enemy action on life and property, women volunteers now work as: drivers, messengers, air raid wardens, in emergency food and housing services, in medical services as physicians and trained nurses and nurse's aides. As the draft accelerates it seems more than likely that women will have to replace men volunteers. They will hold a bigger share of the air raid warden posts and more of them will enter such services as fire watchers, auxiliary firemen, and auxiliary police services. From twenty to thirty-eight hours class training and drill are required to earn the OCD insignia and operate in these fields.

By all odds the most needed of these services, so far as women are concerned, is that given by the Nurses Aide Unit. Here Volunteer Nurse's Aides, trained by the American Red Cross, assist registered nurses so that they may serve a greater number of patients with their specialized and scientific skills. The nurse's aides take on such important and necessary tasks as cleaning and sterilizing equipment and feeding helpless patients, as well as carrying trays and other routine sick room tasks. In time of emergency, as regular members of an emergency medical service field unit team, they assist in the treatment of civilians on the scene of emergency action, or in casualty stations. Aides must be between the ages of 18 and 50, and must complete 80 hours special Red Cross training, which includes 45 hours of supervised hospital work. They are also pledged to complete, within one year of becoming a member, 20 hours of first aid and to give 150 hours volunteer work as a Nurse's Aide.

Citizens Service Corps.—War services which are carried on by unpaid civilians under this corps fall into the following general classifications: Salvage, War Stamps and War Bond Sales, Family Security Services, Child Care Services, Health and Hospital Services, Nutrition Services, Consumer Programs, Housing Programs, Recreation and Youth Group

Services, School and Education Programs, Library Services, Information Services, service as Neighborhood or Block Leaders, and Other Wartime Services. Women are active in all of them.

Candidates for this Corps qualify for membership by (1) completing a prescribed training course; (2) completing a prescribed apprenticeship; (3) completing 50 hours of volunteer work for which no specific training course is required.

Most of these services are explained by their titles which bring mental pictures of women collecting the scrap, selling war stamps and bonds, assisting in day care programs for children of working mothers, advising on food buying and helping in group feeding projects, leading consumer discussions and promoting clothing clinics, giving services to soldiers on leave, teaching Americanization classes.

Of special note, however, are the Neighborhood or Block leaders. The OCD is urging the adoption of the Block System, a natural avenue for action by women, by every town and city in the country, and the Extension Service of the Department of Agriculture is fostering its use in rural areas. Under this system, the community is organized for action in the field of civilian war services—salvage, car-sharing, nutrition, stamp and bond buying, growing victory gardens, sharing the meat—just as it is organized for action in an air raid. Block leaders are chosen in each block or neighborhood. They report to a sector block leader who in turn reports to a zone leader. On the block leader rests the responsibility for attending such meetings and reading such materials as are necessary for her to give a sympathetic explanation of the program to her neighbors and swing them into action.

To volunteer for such services, go to your local Civilian Defense Volunteer Office or your local Defense Council.

American Red Cross.—The Red Cross Volunteer Special Services, familiar in this war as in the last, have a total enrollment of nearly 3,000,000 women, who perform a variety of volunteer duties in the following corps: Production, Canteen, Motor, Volunteer Nurse's Aide, Hospital and Recreation (Gray Ladies), Home Service, and Staff Assistance.

The largest service is the Production Corps, which in the year ending June 30, 1942, turned out more than 71,000,000 surgical dressings and 6,500,000 garments including thousands of knitted articles.

The more than 9,000 Gray Ladies of the Hospital and Recreation Corps perform many services for patients in military and civilian hospitals.

The Canteen Corps with 25,362 members, specializes in emergency feeding. A total of 100,000 canteen aides has been trained to help this Corps in emergencies.

The Motor Corps, active in about 850 Red Cross chapters, has a personnel of approximately 12,000. Its members are trained in first aid, map reading, and motor mechanics. They drive on assignments from the Red Cross chapter, and occasionally give special services to the armed forces.

The Volunteer Nurse's Aide Corps has grown from 364 nurse's aides in 19 chapters on December 7 to approximately 30,000 aides in 678 chapters. A call has been issued for 100,000 nurse's aides.

To offer your services in any of these fields, apply to your local Red Cross chapter.

USO.—Volunteers by the hundreds help the USO give service to soldiers and sailors on leave or in transit and to workers in the war plants. These volunteers dance with the boys, give them competition at games, take them sightseeing, feed them sandwiches and coffee. They organize athletic classes and parties for women war workers. They also give welfare services to families. For volunteer work with the USO, apply to your local USO headquarters.

Civic clubs.—War time work to keep alive the many worthy projects of the many civic clubs of this country, and to carry along war responsibilities as well, is a worthy field for the women who comprise these clubs and work as volunteers. From the tens of thousands of possible illustrations which might be cited in this field, the following is chosen for the reason that it applies to one phase of the topic under discussion.

In cooperation with the National Roster for Scientific and Specialized Personnel, experimental War Job Information Centers were set up by the local branches of the American Association of University Women in the State of Connecticut, in Boston, New York, Philadelphia, and Baltimore.

These centers, manned by women who work as volunteers, help women find paying war jobs of the type which require specialized training and experience. They work closely with the USES, the Civil Service Commission, the personnel directors and officials of industry. They also keep current information on training facilities and refresher programs. Personal contacts with officials of government and industry have resulted in cordial relationships which make it possible to direct applicants to specific personnel departments, thereby saving much time and effort. Since some employers send directly to large colleges and universities for specially trained personnel, one of the purposes is to help women from smaller colleges. These experimental centers have proven so useful that the Association now is moving to make War Jobs Information Centers a national project, to be taken up by its branches wherever there is need of the service and there is the volunteer personnel to carry it on.

The American Women's Voluntary Services.—Conducts two free courses in communications which may lead to positions with the Army, Navy, or Civil Service; trains volunteers and offers opportunities for them to serve in motor corps, land armies, and various civilian protection fields. Recruiting is done by the local AWVS group.

Aid to the United Nations.—To the more fortunate people of this nation victims of the Axis must turn for relief. Among the many organizations in this field are the British War Relief Society, Bundles for Britain, United China Relief, Greek War Relief, and Russian Relief. This work is largely carried forward by volunteers.

It's a woman's war now.—No discussion of the work of the woman volunteer would be complete without emphasizing the fact that we are in this war all the way, it's a woman's war right now, and women should be thinking in terms of going into full-time work and carrying along many of their volunteer activities as side lines. It has been done in England. It can be done here by careful planning and hard work.

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THE UNIVERSITY OF CHICAGO

ROUND TABLE

WOMEN, WORK AND THE WAR

See pp 13, 14-15, 22,

A Radio Discussion by

- COL. BATTLEY
- NEIL JACOBY
- FRIEDA MILLER
- WILLIAM OGBURN

422d BROADCAST IN COOPERATION WITH THE NATIONAL BROADCASTING COMPANY · 210

MARCH 22, 1942

THE UNIVERSITY OF CHICAGO

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NOTE

The supplementary information contained in the footnotes to the following text, developed by staff research, is not to be considered as representing the opinions of the ROUND TABLE *speakers. Following the transcript of the broadcast are questions which readers may wish to use for analysis and discussion. It is hoped that teachers and discussion leaders may find this additional service of the* ROUND TABLE *transcript helpful in their study of the subject discussed in the broadcast.*

WOMEN, WORK AND THE WAR

A UNIVERSITY OF CHICAGO ROUND TABLE BROADCAST*

●

COLONEL JOSEPH BATTLEY, Chief of the Manpower and Liaison Branch of the Resources Division of the War Department and Member of the War Production Board's Labor Supply Committee

NEIL H. JACOBY, School of Business, University of Chicago; Secretary of the University

FRIEDA MILLER, Industrial Commissioner of the State of New York

WILLIAM F. OGBURN, Chairman of the Department of Sociology, University of Chicago

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* A radio discussion broadcast from the University of Chicago, over the Red Network of the National Broadcasting Company, Sunday, March 22, 1942, at 1:30 P.M., Central War Time.

The ROUND TABLE, oldest educational program continuously on the air, is broadcast entirely without a script, although participants meet in advance, prepare a topical outline, and exchange data and views. Subjects are chosen because of their social, political, or economic significance. The program has no "ax to grind." In the selection of speakers, the effort is to provide a balanced discussion by participants who have special competence and knowledge. The opinion of each speaker is his own and in no way involves the responsibility of either the University of Chicago or the National Broadcasting Company.

WOMEN, WORK AND THE WAR

●

The productive effort required by total war is rapidly eliminating unemployment in America. Six months or a year from now the word "unemployed" may be synonymous with "unemployable." How many men will be required for the armed forces will depend partly upon how long the war lasts and upon how fast men can be trained. With facilities for military training being expanded and an army of more than 7,000,000 men described as a minimum, the woman power of America has become a vital ingredient of victory.

Will women be conscripted in the United States as they have been in Britain? What can women do to speed the winning of this war? How far has replacement of men by women progressed? What is being done to prepare women for jobs in war industries?

To answer these and other questions of interest to all Americans, the University of Chicago ROUND TABLE *invited four expert observers to its microphone to discuss: "Women, Work, and the War."*

●

MR. JACOBY: An ever increasing number of young, able-bodied men are going to be leaving the farms, the factories, and the offices where they work to join the armed forces. I'm wondering, Colonel Battley, whether they're not all going to have to be replaced by women?

Col. Battley: There's no question about that, because within the past few days General Hershey has announced that the question of pure dependency alone would not keep a man out of the armed forces, which means that deferment will depend upon a man's occupation or his contribution to the war effort. I notice in today's paper that General Hershey states that 2-A men will be called. Therefore, I can see women coming into the picture in increasing numbers.

Miss Miller: I'm sure that women are one of the big resources in our industrial field, and, as head of the Labor Department in a big industrial state, I can't see many things in the industrial picture that they aren't able to do.

Mr. Jacoby: Well, let's take the year 1942. We all know that the war effort is not going to reach its peak in this year, and no one knows how big an army we'll have and how many people will be laboring in munitions factories before it's all over. But at the beginning of this year about five million people were engaged in war production. What's the estimate for the end of the year?

Col. Battley: It's about time that we face the facts. We know that we need fifteen million workers in war production to carry out the President's directive. That means we have to find those additional workers at the same time that the armed forces are drafting men to go to fight. The war will be won on the fighting front.

Mr. Jacoby: Right.

Col. Battley: But we must have production soldiers behind the front. Where are those people coming from?

Mr. Jacoby: What you're saying is that during this year alone we must add about ten million workers to the armament factories of America. And how about the armed forces?

Col. Battley: Well, it has been announced that for this year we'll have an army of three million six hundred thousand men. That will mean at least two or three million men will have to be called from their civilian jobs to go into uniform.

MR. JACOBY: I'd like to ask, Miss Miller, where are we going to get thirteen million men this year—the ten million workers for defense industries and the three million men for the armed services?

MISS MILLER: You mean thirteen million more *people*, not *men*, because, of course, that is where the women come in.

MR. JACOBY: That's right.

MISS MILLER: Both men and women will come from civilian industry into war industry. New workers, young people, and boys and girls will go into industry. Some will come from the unemployed; some will be older workers; many of them will be women who have not been in industry heretofore and whose potential skills are going to be used.

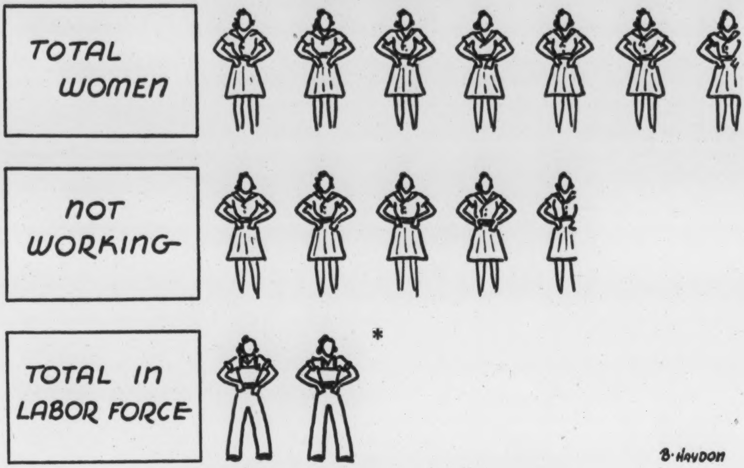
MR. JACOBY: There are now about four million unemployed who presumably will be drawn into the war effort. There are, also, I am told, about two million women who are immediately recruitable for war jobs because they don't have small children or because they're unmarried. There are about a million youth in the country who will come of age this year and who can go into factories. And that leaves around six million who must transfer from civilian plants that are closing down into war plants that are opening up. Do those figures jibe with yours?

COL. BATTLEY: To the best of our knowledge those figures are correct. After all, figures are only theoretical; but I think for the purpose of our discussion we can say that those figures are correct, and our job is to find out where we can get the additional workers.

MR. JACOBY: That poses a tremendous problem for the United States, because we now have about five hundred thousand women

WOMEN IN THE UNITED STATES*

Census of 1940



EACH COMPLETE SYMBOL EQUALS 5,000,000

in war industry, and we'll have to increase that to about two million by the end of this year.

Col. Battley: In the first World War we had about two million women in war work. If we have five hundred thousand now, that means that we must increase the percentage beyond that of the last war, because we're going to take more men.

Miss Miller: Agreed.

Mr. Jacoby: Right now we're relying on a volunteer method of getting women into war work. The manicurist in a hotel, let us say, is not going to become a war worker unless she volunteers to do so. And I'm wondering whether women are becoming available under this method in the right places?

---

* *The labor force includes 8,700,000 women employed in other than public work; 300,000 employed in public emergency work; 800,000 experienced workers seeking employment; and 300,000 new workers.*

COL. BATTLEY: I can tell you something about that from my experience in inspecting plants and in trying to advocate more women going into training. In one of the large California aircraft plants, the fuselage assembly line is manned 100 per cent by women, and they're doing a splendid job. They get all the women they want. The women are signing up to take training in those plants. I think Miss Miller can tell us a little more about her experience in New York, but I do not think that now is the time to draft women.

MR. JACOBY: I'd like to hear what Miss Miller has to say, but I should like to note this: Britain found it necessary, last April, to enrol all women between the ages of twenty and thirty and to give them their choice of going into a defense plant, into civilian defense work, or into one of the uniformed auxiliary services. I'm wondering whether we may not, in the United States, come to the point where we can no longer rely on volunteer methods?[1]

---

[1] *In Britain the government has had the authority since May, 1940, to conscript women as well as men for either the armed forces or industry. Registration of all women between the ages of twenty and thirty began a year ago, and by August, 1941, more than 1,517,000 had enrolled, and 650,000 of them who were not already engaged in work for national defense were called for interviews by the National Employment Exchange. About 175,000 were classified for national defense jobs. In all, about 750,000 women who formerly were not employed at all are now at work in British munitions factories. A recent report indicates that women make up 40 per cent of the workers employed in the production of tanks. More than 30 per cent of the workers in the aircraft industry are women, and the government estimates that 70 per cent of the work could be done by women if a training program were started at once.*

COL. BATTLEY: General Hershey has already said that it may be necessary to draft women, but I don't think that he meant it in the sense that we understand the term "draft"; that is, by compulsion. It would permit the efficient utilization of women.

In Great Britain they registered one million five hundred thousand women between the ages of twenty and thirty. They interviewed about six hundred and fifty thousand and found that only one hundred and seventy-five thousand were suited for war work.

MR. JACOBY: Yes, but will you find out how many are suitable until you register them? That's my point.

MISS MILLER: Isn't it true, generally, as I know it to be in New York, that there actually are thousands of women registered in our employment exchanges who want jobs, who would like to go into war industry, who would like to go into training courses, but who have not yet been able to connect up with those things? As you said in another way, isn't the problem to connect available women with jobs that need them rather than to seek some forcible means of dragging them in?

COL. BATTLEY: That is true. Unfortunately, women want to do things. They are registering to do voluntary work, they are knitting socks, and they go to our employment service and register and expect to be called immediately.

But our program is just beginning. It's not a question of immediate employment, it's a question of training women to take the jobs of the men as they're called from their civilian jobs to the armed services.

MR. JACOBY: I fully agree with you, but what jobs can women take over from men that will make them most useful to the country?

MISS MILLER: I think that there are only two kinds of limitations on women's work. One, the heavy jobs are not suitable; and, second, women cannot be used for immediate replacements where the job requires time to develop high skills. I find, for instance, in the latest reports on the kinds of training that women are taking that they are found in considerable numbers in drafting and blueprint classes; in machine-shop classes; in radio-service classes; in sheet-metal work; in inspection-training; in lens-grinding; in light assembly; and in welding.

MR. JACOBY: Those are what you might call "line" jobs—jobs that can be filled by women after a reasonably short period of training.

MISS MILLER: That is true.

MR. JACOBY: I'd like to point out that women also are taking over minor executive jobs in offices and elsewhere. For example, here at the University of Chicago, in our School of Business, we have courses in which we're training women in typing, in accounting, in factory inspection, and in personnel work, so that they can replace men who are leaving those jobs for the armed forces.

COL. BATTLEY: That's true in other colleges. We have, I would say, about 3,750 wartime co-eds now taking prescribed training in airplane designing, physics, chemical analysis, and drafting. And, incidentally, there are lots of people who say women don't make good draftsmen. Well, they make good "draftswomen," and we're placing lots of them in electrical concerns around the New Jersey area.

MR. JACOBY: The unemployment services of the federal government are fulfilling a very important function, but I think many people don't know how they ought to go about getting a job in a war industry.

As head of the manpower division of the War Department, Colonel, can you explain exactly what a woman who wants a war job should do?

COL. BATTLEY: Well, I wish the General were here to answer that, but I'll try. There are so many agencies that it's hard to suggest where to apply.

MR. JACOBY: That may be just the difficulty.

COL. BATTLEY: If they'll apply to the United States Employment Service, they'll be judged and classified according to age, education, and aptitude and sent to the most suitable training agency. And I'd like to add that we do not find that lack of mechanical ability keeps women out of jobs but lack of mechanical familiarity. They are making good mechanics.

MR. JACOBY: You were telling me just before the broadcast that women actually do better work in wiring the panels of bombing planes than do men; that they maintain a rate of output that men apparently aren't able to do.

COL. BATTLEY: That is true, and that has been the experience of most airplane manufacturers. Women on these jobs do a better job, waste less, and stick on the job.

MR. JACOBY: Do you think that women will find jobs if they go to the unemployment exchanges that Colonel Battley has mentioned?

MISS MILLER: Both things will happen. Where they are in communities that need immediate employment, they will be employed, unless management resists. If they are in communities where as yet there are unemployed men, the unemployed men are much more likely to be placed before women. I also think it is true generally that, even for the training courses which women have sought, women haven't had an equal opportunity with men for enrolment there.

MR. JACOBY: These training courses that you mention are what are known largely as "training in industry," are they not? The woman actually attends a course that is conducted by the plant in which she proposes to work eventually.

MISS MILLER: Such courses are becoming increasingly available.

MR. JACOBY: For example, while walking through a large Chicago bank recently, I noticed a girl standing behind every teller in the cages. Apparently the girls were learning the duties of the teller and planning eventually to replace him when he left the bank.

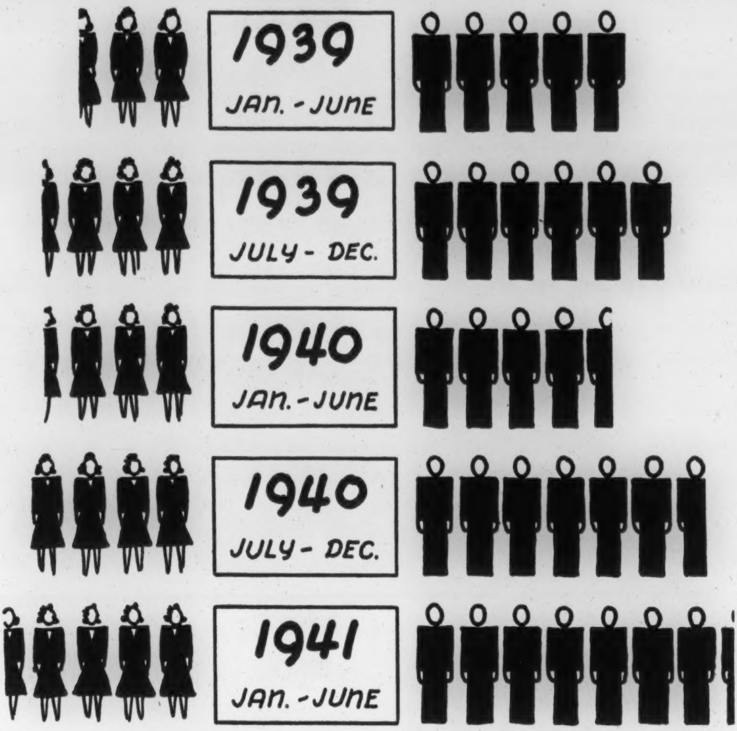
COL. BATTLEY: That's true throughout industry. They are training women to do the jobs, and for the skills that they need for those jobs.

MR. JACOBY: Has industry really recognized to the full extent its responsibility for making these replacements? May not some industrial executives wake up some morning to find that their young men are leaving at a rapid rate and that they have no trained women to take over the work?

COL. BATTLEY: That's the trouble. It's difficult to start an all-out training program for women while you still have men available in certain localities. But those employers who don't start figuring on training women to replace men when they go are going to be caught at a time when it's going to be critical, because we will not have production.

MISS MILLER: I think we ought to tell employers generally both that they have a training job to do and that they have an induction job to do. First of all they must select these women for jobs that must be done as their program develops; and, second, they must properly fit them into their employment personnel when they come into the factories.

PLACEMENT OF MEN AND WOMEN IN JOBS, 1939–1941



EACH COMPLETE SYMBOL EQUALS 200,000 WORKERS

SOURCE: SOCIAL SECURITY BOARD

Mr. Jacoby: Then we need some farsighted action on the part of employers. The mere fact that there are some unemployed men in their locality does not justify them in taking a lackadaisical attitude about training women.

Miss Miller: I'd like to ask the Colonel a question about that.

It's not your idea, any more than it is mine, to substitute women for men who are outside the scope of the draft, is it?

COL. BATTLEY: No, not at all! It's to supplement our working force. Nor do I say that women should replace men. Women should go in to do the jobs that the men are doing now while the men are away fighting.

MR. JACOBY: That brings us back to a point we discussed at the beginning. Even if we employed all the four million unemployed persons, even if we took in all the youth, we still would not have enough people to fill the jobs that are being vacated by men going into the armed services.[2]

COL. BATTLEY: I'd like to say one thing: This is an opportunity for women to justify the Fourteenth Amendment to the Constitution. That has not been done to date.

MR. JACOBY: In other words, the right to vote should carry the responsibility to work, when needed.

MISS MILLER: It isn't a matter of dashing out tomorrow morning and getting a job, because if that should be done I'm afraid we would have some backwash. What we want to say is that women who think they are able to do jobs in defense plants should go to their local United States employment office. They should make known their availability. They should register there for the courses and be prepared to be useful when they're called on.

MR. JACOBY: Aren't there some difficulties that employers may face when they set out to hire a large number of women? How about wage-hour laws and minimum working standards? Will they require modification in the light of the fact that women are now coming into plants?[3]

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[2] *Persons unemployed in December, 1941, numbered 3,800,000, or 7 per cent of the civilian labor force, according to the W.P.A. monthly unemployment survey. This compares with 7,100,000, or 13.3 per cent, of the labor force in December, 1940 ("Monthly Labor Review," February, 1942).*

Miss Miller: There are often temporary problems, such as adjusting shifts. In the long run, the standards of maintaining working conditions that don't result in fatigue are generally observed by employers and will continue to be observed.

Mr. Jacoby: Then you don't think the present state of the labor law offers any difficult obstacle to the employment of women?

Miss Miller: We haven't found it so in New York.

Mr. Jacoby: Does that check with your experience, Colonel?

Col. Battley: That's true in New York, but there are several states where we do have labor laws that have to be changed or exemptions granted before we can put women on a full-time work basis. Manufacturers can't be expected to organize and train women for a three-shift job if they're not sure that at the time they're needed they can put those women to work.

Mr. Jacoby: There's another angle to this whole problem that we haven't touched, and that is the responsibility of the labor union. We've said that the employer ought to be farsighted enough to train

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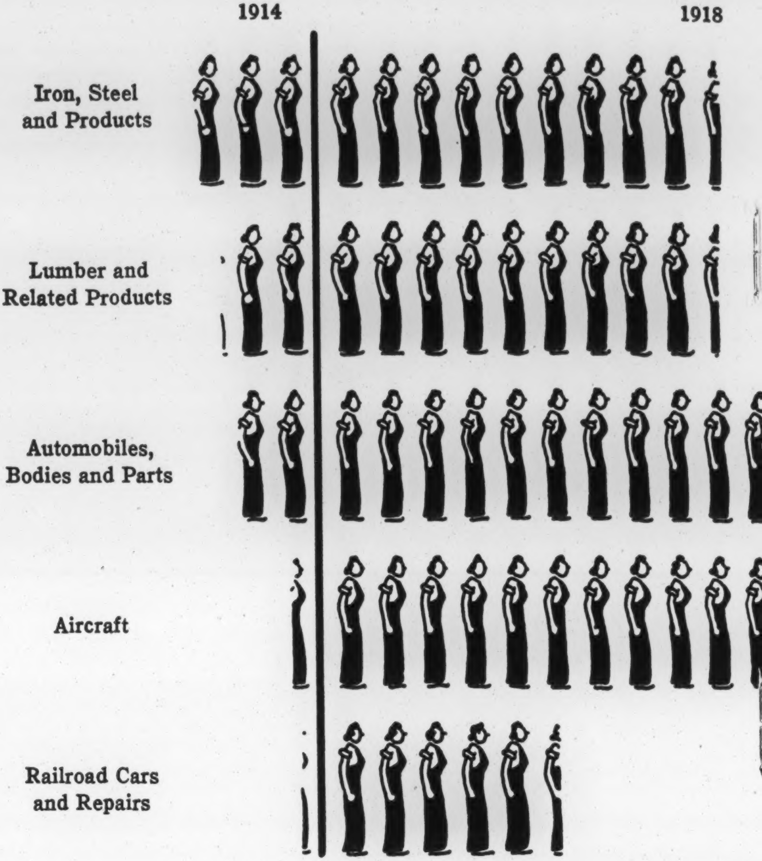
[3] *The Women's Bureau of the Department of Labor released the following comparison of legal standards for women's work in 1918 and 1940:*

	States Having Laws	
	1918	*1940*
8-hour day, 48-hour week, or less (some occupations)	*3*	*19*
8-hour day (some manufacturing occupations)	*6*	*15*
Minimum-wage laws	*12*	*26*
Regulation of industrial homework	*13*	*18*

WOMEN IN SELECTED WAR I
AND AFTER W



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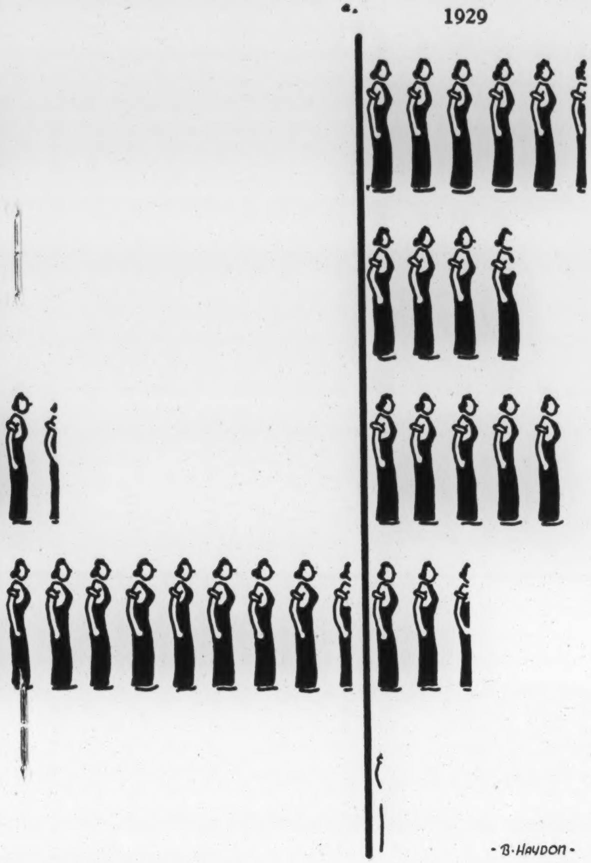
SOURCE: UNITED STATES DEPART

INDUSTRIES BEFORE, DURING
WORLD WAR I -



- B·HAYDON -

MBOL EQUALS I PER CENT

ARTMENT OF LABOR, WOMEN'S BUREAU

women, even though he doesn't seem to need them at the moment. But in training women we come up against this old bogeyman of equal pay for equal work.

In Britain, when women first started to come into industry, there was a very much publicized phrase called "the dilution of labor." The men in the unions objected to women coming in and diluting the labor market, as they called it, and held that they ought to get less pay for the same work.

MISS MILLER: I think that the men would rather object to the women's coming in at lesser wages than at having them come in at the same wages. If women are brought in at substandard wages, then there is a tendency to use them to substitute for men who are not called into the war effort. If equal pay for equal work prevailed, I think the opposition of the labor unions to the induction of women into jobs would largely disappear. Don't you think so, Colonel?

COL. BATTLEY: I find that more and more employers are paying equal pay for equal work.

MR. JACOBY: Yes, and there was a strike recently in Detroit because a defense plant was not paying women an hourly wage rate equal to that being paid the men, and the men in the plant struck.[4]

MISS MILLER: Isn't this true, Colonel, that in that Detroit situation there wasn't a labor shortage?

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[4] *In early November, 1941, the United Automobile Workers Union (C.I.O.) called a strike at the Kelsey-Hayes Wheel Co.'s new machine gun plant in Detroit. Men at Kelsey-Hayes who were paid $1.00 an hour struck because the company, expanding its work force, hired women at 85 cents an hour. The union asserted that the company was employing women in order to shave down the pay roll and officially sanctioned a walkout because its $1.00 wage standard was threatened.*

Col. Battley: I think that they won't have enough labor in the Detroit area to take care of the load that they'll have on them.

Miss Miller: Right!

Mr. Jacoby: The chances are that, when there is a heavy demand for labor, and a limited supply, the old prejudice against equal pay for equal work will disappear just as it has in England.

Col. Battley: Yes, and I think that the unions will be the agencies to see that it disappears.

Mr. Jacoby: I wonder whether it isn't appropriate to suggest that women in the home can do a great service to their country right now? We know that in most families women get the weekly pay check and budget the family's expenditures. Would it not be a service to the country if women set up a savings account in which they'd accumulate money to buy Defense Bonds and pay next year's income taxes?

Miss Miller: I think it would be a very great contribution to the country's and to their family's welfare if they realized that now especially they must make every penny of that income do maximum service.

We've had a 10 per cent increase in the cost of living, and the women have a very great responsibility for the careful spending of their income.[5]

Mr. Jacoby: Even before women get out of the home and get into overalls in defense plants, then, they have a job to do?

Miss Miller: That's right.

Mr. Jacoby: It's not beside the point to suggest that they ought to try to save in every way and defer purchases of goods that limit the facilities available for war production.

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[5] *According to the Department of Labor, the cost of living had risen from 98.6 per cent in August, 1939, to 112.8 in February, 1942 (1935–39 = 100) (United States Department of Labor).*

MISS MILLER: That's something that every woman can take home to herself.

MR. JACOBY: Well, you know, there are many other important questions we haven't answered about the long-run social effects of placing many women in war work.

Professor Ogburn, you've written books on the family. I'd like to ask you, "How does the war affect women in family life?"

MR. OGBURN: The family bears the brunt of war more than any other social institution. It takes it on the chin, so to speak, more than the church, more than government, and more than most industries. The head of the house and the sons are taken away to the battle front, and the woman is left to carry on by herself, on a reduced family budget. The wife will have to decide alone many serious problems regarding her children's welfare. In the country the women will have to do the work of men in the fields. Women are the unsung heroes of war. In defense areas the homes of workers' families are often tents and trailers, where the community life is extremely meager and limited. When families are on the move, home life becomes disorganized.

In England, bombing meant the evacuation of women and children—two million of them—over the countryside. Thus the family life was completely disorganized.

MISS MILLER: But doesn't the war create many new families by increasing the marriage rate?

MR. OGBURN: Yes, it does. War makes it easy to get married; and in the beginning of war, war brides are quite numerous. Its a grand chance for a woman to find a husband and for a man to find a wife.

But I may note that these war marriages do not always make homes. They only make war widows out of war brides. Indeed, after the last World War, there were, in the Continental warring countries, about six million more women of marriageable age than men at the close of the war. So vast numbers of these women could find neither a job nor a husband. It's rather sad to contemplate, by the way, what the life of these surplus excess women must have been like.

COL. BATTLEY: That's rather a dark picture you draw. Is war wholly bad for the woman and the family?

MR. OGBURN: War is a dark picture, Colonel, as you know; and the tragedy of war is felt in the family more than any place else. However, the war does enlarge the activities of many women. They get jobs, as you have just been saying, and interesting ones, away from their homes.

Woman's place is no longer in the home but out in the world. And I may also note that war breaks up the habits and the routines of life, and the inhibitions; and there is a certain liberation of women from the confinements of the household duties.

The last World War brought woman suffrage, as you know, and gave a really great impetus to the feminist movements. You remember, also, that the "flapper" age in the 1920's followed the last World War. Never before had young girls had so much freedom.

MISS MILLER: Do you think that freedom will last this time?

MR. OGBURN: The family, after the war, will take up its normal life again, of course. The heads of many homes will not come back, and the widows will not remarry; but in time the family will be again the basic institution it has always been.

Men will take the jobs away from women in some cases, especially where the men are organized. Before the last World War about one in fifteen or twenty married women worked for pay outside the home. After the war, by 1930, one in eight or nine married women were at work. There are over six hundred basic occupations employing women today. Women will surely give up much of the freedom they have gained during the war, but they will have more freedom as a result of the war than they ever had before, I am sure.

Mr. Jacoby: Well, we seem to agree that the national labor situation does not now call for the drastic action of drafting women for war industry. It does call for the prompt adoption by industries of programs for training women and older persons to replace able-bodied young men, because, as Colonel Battley pointed out, every able-bodied young man eventually will have to fulfil an essential spot in the war program.

It does call for a realization by women that their country needs their sustained and enthusiastic participation in voluntary industrial programs. Only with this participation of women can the forthcoming enormous demands for labor power be met in the interests of victory.

Would you agree, Miss Miller?

Miss Miller: I would.

Mr. Jacoby: And I think we might also add that it will call for enlightened and farsighted action on the part of industry in inaugurating training programs and on the part of labor unions in admitting women.

SUGGESTED READINGS

ADAMS, F. S., "Women in Democracy's Arsenal," *New York Times Magazine*, October 19, 1941. *A survey of American women in war work.*

AMIDON, BEULAH, *Better Nursing for America*, "Public Affairs Pamphlet," No. 60. New York: Public Affairs Committee, 1941. *Explains the need for more nurses and higher nursing standards.*

BANNING, MARGARET C., *Women for Defense*. New York: Duell, Sloan & Pearce, 1942. *Describes the full scope of war work for women.*

"British Women at War Fill 2,000,000 Jobs," *Life*, August 4, 1941. *Statement of the work done by the different organizations of British women.*

CLOSE, KATHRYN, "Volunteers in Critical Times," *Survey Mid-monthly*, New York, January, 1941. *An article on the volunteer workers in emergency, citing the Winnipeg plan.*

COMSTOCK, ALZADA, "Britain Drafts Women for War Work," *Current History and Forum*, January, 1942. *Tells of the political aspects of conscripting women.*

"Congress Informed of Labor Program for Recruitment and Training of Women To Meet Urgent Need for War Workers," *Victory*, February 10, 1942. *An official of the War Production Board Labor Division reports to Congress.*

CULLIS, WINIFRED C., *et al.*, "Women's Role in War." Cleveland: American Economic Foundation, 1942. *A radio discussion in the "Wake Up, America!" series.*

DAVIS, MAXINE, "Women in the War," *McCall's*, January, 1941. *A sketch of women's role in defense, both volunteer and industrial.*

"Detroit Strike over Hiring Women at Less Pay," *Business Week*, November 8, 1941.

ELIOT, MARTHA M., "Women and Children in Wartime," *Survey Graphic*, March, 1942.

HAMBROOK, ROBERT W., *Aviation Training for Women*. Washington, D.C.: U.S. Office of Education, 1941.

✓ *Increase in Women Employment, 1914–18, and Occupations of Women in Defense Industries*. Washington, D.C.: U.S. Department of Labor, Women's Bureau, September, 1940.

MCLAUGHLIN, K., "No Sam Browne Belts, Says Mrs. Roosevelt," *New York Times Magazine*, July 27, 1941.

MCMILLIN, LUCILLE FOSTER, *The First Year*. Washington, D.C.: U.S. Civil Service Commission, 1941. *A study of women's participations in federal defense activities.*

"Mobilizing Man Power for the War," *United States News*, December 19, 1941.

"More Than a Million Women To Be Needed in Making War Needs, Says Hillman," *Victory*, February 3, 1942.

"Mrs. Roosevelt's Plan," *Time*, June 23, 1941.

STRAUSS, PATRICIA, "On the Kitchen Front in England," *Reader's Digest*, February, 1942.

✓ *The Woman Worker*. Washington, D.C.: U.S. Department of Labor, Women's Bureau. *This periodical is devoted entirely to the publication of information for and about women workers. Annual subscription, 25 cents.*

OBJECTIVE QUESTIONS FOR EXAMINATION

The answers to the following questions may be found in the text of the broadcast, and page references are provided to assist in locating the answers.

*

1. How many workers must go into war production during 1942, according to the speakers? Page 3.
2. How many unemployed are there at the present time? Page 4.
3. How many women are there in United States war industries at the present time? How many more women will be needed in 1942? Page 5.
4. Does Britain rely on the voluntary system for bringing women into war work? Page 6.
5. What kind of jobs are women best suited for? Page 8.
6. What should women who want war jobs do? Page 9.
7. What does "dilution of labor" mean? Page 16.
8. What are the important services women can render the war effort through proper planning of family expenditures? Page 17.
9. After the last World War how many more women than men of marriageable age were there in Europe? Page 19.

QUESTIONS FOR ANALYSIS AND DISCUSSION

The following questions of wider scope, intended for discussion, are suggested by the broadcast, and answers may be found in the literature on the subject listed in the section "Suggested Readings," found on pages 21–22.

*

1. What is the manpower situation at the present time? Is there need for "manpower planning"? In what industrial areas will there be manpower shortages?

2. How great is the need for new women workers in 1942? How great is the probable future need for "woman power"? Will public opinion accept the necessity of training women for future work in war industries while there are unemployed men, as at present?

3. Should the government continue to depend upon the present voluntary system for bringing the millions of needed women into war work in the future? What lessons can we learn from British experience in regard to this matter? Should we register women and mobilize them for war work as needed?

4. What training programs to prepare women for working in a war industry are available in your community? Some critics maintain that "training on the job" is the only practicable training program for the large majority of war-industry jobs. How may employers and labor unions be induced to bring women into training, in spite of the present lack of need for their work?

5. Should women receive the same pay as men for the same work? Are there any economic disadvantages to employing women, because of maximum-hour laws?

The Listeners' Round Table . . . .

Letters to the ROUND TABLE *frequently contain interesting and illuminating side lights on the subject matter discussed on the air. These comments are from letters received following recent broadcast-discussions.*

*

Youth Education Today

I was deeply interested in the subject discussed on the ROUND TABLE on February 22, "What Should We Teach Our Youth Now?" For the most part, as an educator "on the firing line," I found myself in agreement with the views expressed by the speakers. In two matters, however, I find myself in disagreement.

First, with regard to intensifying and shortening the period of secondary education. What would these speakers propose to do with children who finish high school at thirteen or fourteen years of age? Many now finish at fifteen or sixteen—too young to leave home to go to college—too young to go into industry or to take a job in business. *Shortening* the period of elementary and secondary education would throw a tremendous number of immature, unprepared young people into a business and industrial world not ready to receive them. What would Dr. Wilbur propose to do with them?

As a secondary consideration, what would these authorities propose to use for money with which to pay teachers to work a twelve-month year? The American public has not shown a willingness to pay them adequately for a nine-month year; how would they finance a 33⅓ per cent increase? Or, do they propose that the teachers add the extra three months of service as a patriotic contribution?

Second, I challenge Dr. Wilbur's statement regarding what children are learning now in the schools about the war. I quote Dr. Wilbur's words, "Where are they learning about the war now? Not in the schools. They are getting it from the newspapers; over the radio; from the motion picture; from family discussion; and from what their brothers tell them about the war experience. The schools are not doing anything about it."

For an educator, Dr. Wilbur shows an abysmal ignorance of what is going on in the schools of America. Has he never heard of *Current Events*, *Junior Review*, *Young America*, *Scholastic*, *Junior Scholastic*—just a few samples of the type of newspapers and magazines in constant use in elementary, junior, and senior high schools throughout the country? They are not merely placed in the school library.

They are used as a basis for instruction and discussion of what is going on in the world today. Not only the war; politics, industry, science, education, international relations—everything (except crime) which appears in the regular newspapers. And in the libraries of junior and senior high schools, read by large numbers of pupils and in many cases used also as definite sources of instruction, are such magazines as *Reader's Digest*, *Time*, and many others. Probably Dr. Wilbur has not come in contact with a weekly service used in many schools called "World Map of the Week"—a large map of the world, approximately 40 by 48 inches, at the bottom of which are printed in large type short accounts of important news developments of the preceding week. On the map itself corresponding numbers indicate the places where the events took place. The schools positively and definitely are teaching children about the war and about the world.

Public education in the United States is badly in need of intelligent support—and intelligent criticism—from its friends. It receives enough destructive and unintelligent criticism from its enemies. Teachers and administrators in the public schools have a right to expect, and to demand, that when outstanding educators like Dr. Wilbur and his associates in the discussion of February 22 make accusations against the schools they be founded on knowledge of the facts and not on supposition or hearsay. It is quite evident that Dr. Wilbur does not know the facts. He is rendering a distinct disservice to public education in our country when he makes such statements to a listening audience of several million people.

C. C. B., Texas

*

Income Ceiling

There was much talk of "broadening the base," as it is so quaintly put, of income-tax payers. Surely we of the low-income group are paying our share, if not in direct taxes then in hidden taxes, and there must be a minimum standard of living maintained—or what are we fighting for?

I am a truck-driver on defense. I make approximately $40 per week. I cannot feed my family for $10 per week; I pay another $10 per week rent plus utilities. I buy my quota of bonds voluntarily and consider I am one of the fortunates in that I am keeping my head above water, though I am not entirely free from debt. There are thousands in this city of Detroit, and elsewhere, who are not breaking even, not to speak of those other thousands in Michigan who are out of work because of priorities.

Yet the National Association of Manufacturers has the guts to suggest a sales tax and a lowering of the tax on corporate profits.

Why hasn't someone in or out of Congress the intestinal fortitude to advocate a tax on all over a stated sum, such as $1,000 per from any source, plus strict rationing of all commodities to insure a fair distribution; and that would take care of any danger of inflation, with, of course, rigid price control on all articles.

K. L. C., Michigan

*

Equality

Regarding some of the views expressed on today's broadcast by you, on the subject of taxes, I should like to say that the man who should take on the biggest burden of charity or defense or any emergency should be the one who has the biggest income. The smaller salaries should not be hit by income taxes. We must have justice.

I know that the financial structure of the United States and of the world, more or less, is built to keep the control of money in the hands of a very few, and they simply cannot bear to have the "masses" own any property but immediately plan to insure against it. This is not justice.

Remember, we are "building, not destroying," America, according to our President.

E. M. B., Wisconsin

*

Clarification

Have just finished listening to your splendid broadcast on taxes. I have been following the newspaper reports on taxes closely, but nothing has brought the facts to me as clearly as your half-hour broadcast.

The League of Women Voters has been studying a broadside on taxes, which has given us a start. I will urge all our members to send for a copy of your ROUND TABLE discussion.

A. T. W., Indiana

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LISTS

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150. *Can Capitalism Defend America?*
153. *Guns or Butter?*
154. *Dilemma in the Far East*
155. *How To Fight Nazi Propaganda*
156. *The Decline and Fall of the Roman Empire*
157. *Strikes and National Defense*
158. *Defense Economics*
161. *War Aims and Peace Aims*
163. *Lessons from Europe's War*
164. *The Effect of the Blitzkrieg on the Economic Order*
166. *Roosevelt* vs. *Hitler*
169. *War against the Middle Classes?*
170. *The Crisis and Your Pocketbook*
173. *Our Liberties*
174. *Blueprint for Hemisphere Defense*
177. *Defense: Who'll Pay the Piper?*
178. *Japan: Setting Sun?*
179. *National Unity*
180. *Weapons of Economic War*
182. *Crisis of Capitalism*
185. *New Frontiers in Education and Research*
186. *Anti-Semitism*

Nos.

188. *Economics of Blitzkrieg*
189. *Showdown with Japan?*
190. *Science and War*
191. *Defense Inventory*
192. *The Philippines*
193. *Little Business: What Now?*
194. *Labor's Responsibility in Defense*
195. *Canada: Neighbor at War*
196. *Civil Rights and "Public Danger"*
197. *Manpower: The Key to Victory*
198. *What Does Rationing Mean?*

1942

199. *Morale: Ours and Theirs*
200. *How To Meet the Menace of Inflation*
201. *Censorship*
202. *How United Are the Americas?*
203. *Are We Overconfident?*
204. *Labor Policies in Wartime*
205. *What Should the Churches Do in War?*
206. *What Should We Teach Our Youth Now?*
207. *Propaganda: Good and Bad*
208. *Civilian Defense*
209. *Taxes* vs. *Axis.* March 15

All Round Table Transcripts Contain Added Factual Material in the Form of Graphs, Maps, Pictographs, Footnotes, Bibliographies, Etc.

It Takes MEN To Win a War . . . .

You should read: *Labor's Responsibility in Defense* (*194*), *Manpower: The Key to Victory* (*197*), and *Labor Policies in Wartime* (*204*). These discussions contain important facts about the effects of war upon America's fighting and working manpower.

ROUND TABLE NETWORK OF 102 STATIONS

2:30 P.M. EASTERN WAR TIME

City	*Call Letters*	*Kilo-cycles*	*City*	*Call Letters*	*Kilo-cycles*
Allentown, Pa.	WSAN	1470	Lima, Ohio	WLOK	1240
Altoona, Pa.	WFBG	1340	Manchester, N.H.	WFEA	1370
Asheville, N.C.	WISE	1400	Miami, Fla.	WIOD	610
Atlanta, Ga.	WSB	750	New York, N.Y.	WEAF	660
Baltimore, Md.	WBAL	1090	Norfolk, Va.	WTAR	790
Boston, Mass.	WNAC	1260	Philadelphia, Pa.	KYW	1060
Buffalo, N.Y.	WBEN	930	Pittsburgh, Pa.	KDKA	1020
Charleston, S.C.	WTMA	1250	Portland, Me.	WCSH	970
Charlotte, N.C.	WSOC	1240	Providence, R.I.	WJAR	920
Cleveland, Ohio	WTAM	1100	Raleigh, N.C.	WPTF	680
Columbia, S.C.	WIS	560	Richmond, Va.	WMBG	1380
Columbus, Ohio	WCOL	1230	Rochester, N.Y.	WHAM	1180
Dayton, Ohio	WING	1410	Savannah, Ga.	WSAV	1340
Detroit, Mich.	WWJ	950	Schenectady, N.Y.	WGY	810
Florence, S.C.	WOLS	1230	Springfield, Ohio	WIZE	1340
Grand Rapids, Mich.	WOOD	1300	Tampa, Fla.	WFLA	970
Greenville, S.C.	WFBC	1330	Washington, D.C.	WRC	980
Jacksonville, Fla.	WJAX	930	Wilmington, Dela.	WDEL	1150
Johnstown, Pa.	WJAC	1400	Winston-Salem, N.C.	WSJS	600
Lakeland, Fla.	WLAK	1340	Zanesville, O.	WHIZ	1240

1:30 P.M. CENTRAL WAR TIME

Amarillo, Texas	KGNC	1440	Louisville, Ky.	WAVE	970
Birmingham, Ala.	WBRC	960	Madison, Wis.	WIBA	1310
Bismarck, N.D.	KFYR	550	Mankato, Minn.	KYSM	1230
Bristol, Tenn.	WOPI	1490	Memphis, Tenn.	WMC	790
Chicago, Ill.	WMAQ	670	Minneapolis and St. Paul, Minn.	KSTP	1500
Duluth, Minn., and Superior, Wis.	WEBC	1320	New Orleans, La.	WSMB	1350
Eau Claire, Wis.	WEAU	1070	Oklahoma City, Okla.	WKY	930
El Paso, Texas	KTSM	1380	Omaha, Neb.	WOW	590
Evansville, Ind.	WGBF	1280	Pittsburg, Kans.	KOAM	810
Fargo, N.D.	WDAY	970	Rochester, Minn.	KROC	1340
Fort Wayne, Ind.	WGL	1450	St. Cloud, Minn.	KFAM	1450
Fort Worth, Texas	KGKO	570	St. Louis, Mo.	KSD	550
Hattiesburg, Miss.	WFOR	1400	San Antonio, Texas	WOAI	1200
Indianapolis, Ind.	WIRE	1430	Shreveport, La.	KTBS	1480
Jackson, Miss.	WJDX	1300	Sioux Falls, S.D.	KSOO	1140
Kansas City, Mo.	WDAF	610	Springfield, Mo.	KGBX	1260
Kingsport, Tenn.	WKPT	1400	Terre Haute, Ind.	WBOW	1230
Laurel, Miss.	WAML	1340	Tulsa, Okla.	KVOO	1170
Little Rock, Ark.	KARK	920	Wichita, Kans.	KANS	1240

12:30 P.M. MOUNTAIN WAR TIME

Albuquerque, N.M.	KOB	1030	Phoenix, Ariz.	KTAR	620
Billings, Mont.	KGHL	790	Pocatello, Ida.	KSEI	930
Boise, Ida.	KIDO	1380	Salt Lake City, Utah	KDYL	1320
Bozeman, Mont.	KRBM	1450	Tucson, Ariz.	KVOA	1290
Butte, Mont.	KGIR	1370	Twin Falls, Ida.	KTFI	1270
Denver, Colo.	KOA	850	Yuma, Arizona	KYUM	1240
Helena, Mont.	KPFA	1240			

11:30 A.M. PACIFIC WAR TIME

Fresno, Cal.	KMJ	580	San Francisco, Cal.	KPO	680
Los Angeles, Cal.	KFI	640	San Diego, Cal.	KFSD	600
Medford, Ore.	KMED	1440	Seattle, Wash.	KOMO	950
Portland, Ore.	KGW	620	Spokane, Wash.	KHQ	590
Sacramento, Cal.	KFBK	1530			

STATIONS CARRYING ROUND TABLE BY TRANSCRIPTION

Cincinnati, Ohio	WSAI	1360	10:30 P.M. E.W.T.
Milwaukee, Wis.	WTMJ	620	4:00 P.M. C.W.T.

The American Temper

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A UNIVERSITY OF CHICAGO ROUND TABLE BROADCAST

●

MARCH 29, 1942

●

MAX LERNER, Department of Political Science, Williams College

W. W. WAYMACK, Editor of the Editorial Pages, *Des Moines Register-Tribune*

LOUIS WIRTH, Department of Sociology, University of Chicago

●

SUGGESTED READINGS

"Fitness for Freedom," *Survey Graphic,* March, 1942. *A special issue devoted to the civilian war effort.*

MITCHELL, DONALD W., "How Strong Is Our Home Front?" *Nation,* March 14, 1942.

WILLKIE, WENDELL L., "Let Us Do More Proposing than Opposing," *Vital Speeches,* March 1, 1942.

[PRINTED IN U·S·A·]

WOMEN IN THE WAR EFFORT
Their Work and Wages

a Talk by

Mary Anderson, Director
Women's Bureau, U. S. Department of Labor

at the

San Antonio Regional Meeting, Catholic Conference on Industrial Relations

Sponsored by the
National Catholic Welfare Conference

April 29, 1942
San Antonio, Texas

WOMEN IN THE WAR EFFORT - THEIR WORK AND WAGES

a talk by

Mary Anderson, Director
Women's Bureau, U. S. Department of Labor

I am glad to be with you today. It's good to have the opportunity to come to Texas in the Spring, to be in the beautiful city of San Antonio in April. But had you chosen a drab, humdrum place to hold your conference instead of San Antonio, this would still be a significant meeting. Wherever responsible men and women come together to explore and to understand the vital issues with which we as a people must grapple, the meeting is significant.

The voice of the National Catholic Welfare Conference has the strength of conviction in public affairs. Your work in the field of human welfare has steadily developed through changing times, and I congratulate you on the vision and courage - which has led you to use your influence and your valuable time, to help solve industrial problems.

I can assure you as a public official who has stood at the crossroads between war and peace in the last conflict, and again, now, in the present one, that in the study of industrial welfare during the present crisis you concern yourselves with the very essence of democracy.

As many of you know, the Women's Bureau was set up in the United States Department of Labor by Congress in the last war to promote the welfare of working women and to make the most effective use of their services for the national good. I was connected with this agency from the very beginning. I have been privileged to serve as its director since 1919. Twenty-five years ago we met our first problems of wpmen in war industries. We learned much in the years which followed when great strides were made in the improvement of labor standards for working women. This knowledge and this experience form the basis of the present activity of the Women's Bureau in the war program.

We are often asked today how many women are on the job in war industries. Definite statistics are not available. But figures are little more than still pictures edited from a high-speed motion picture. What is more, it is almost impossible to draw a sharp line and say this is a war job, that is not. Thousands of workers in your own State, particularly women, have gone over to war production without changing their jobs or learning new skills. Texas is supplying the Army with cotton shirts, trousers and work clothes, made by the same workers on the same machines that turned out civilian clothes in the past. Large supplies of Army mattresses and other bedding are made in Texas. Mosquito netting is an important item. Making huge quantities of jam, harvesting blackberries or packing canned hash seems far removed from war production, and probably wouldn't interest news reporters in search of stories about women in war industries. But the Army has placed with several Texas concerns large orders for foods, among them jam, blackberries, and canned hash. Food is as essential to an army as ammunition.

In a study of women in war work, we must consider not only those in obvious war industries but also those additional millions of women who get repercussions from the war economy, the workers in stores, service trades, and offices.

But first let us look at women in the plants making weapons and instruments of war. Since the first defense contracts were signed in 1940 the Women's Bureau has supplied information on the current use of women on defense production and the possibilities of more extensive employment of women in war industries. This was possible because of detailed occupational analyses made by the Bureau of four key war industries--the manufacture of ammunition for small arms and for artillery, and the aircraft and war instrument industries.

Many production processes in the plants studied are especially adaptable to women. Their keen eyes, nimble fingers and patience in performing intricate work have their place today as essential qualifications for the worker in war industries. In fact, our studies of occupational skills show that women can do practically any production job, provided they are adequately trained, and work under proper conditions.

The term "adequately trained" when applied to women workers deserves special discussion. Until recently not more than one percent of the total number of those who have received training under the vocational training program were women. The small proportion of women trainees is due to the Government's former policy not to train women until managements indicated a readiness to employ them. But the outbreak of war caused a change of policy by the Labor Division of the War Production Board, which recognized the approach of male labor shortages, due both to the steadily increasing numbers drawn into the armed forces and to the rapid expansion of war industries. A recently issued statement declared that all defense training must be open to women on a basis of equality with men, that is, on the basis of qualification for the occupations for which training is offered.

This change of policy toward training women is reflected in your own State. The Dallas Public Evening School opened machine shop and auto mechanics courses to women in January of this year and has announced that "later other courses may be open to women." Forty-eight women are receiving training in a San Antonio aircraft school. One hundred and twenty-seven women have been learning aircraft electrical repair and riveting in Dallas, and 3 women were reported enrolled in aircraft sheet-metal work at North Texas Agricultural College. In Waco and El Paso women are being trained as power machine operators. Even in Texas, where the habit is to look ahead and to do things on a grand scale, the training program for women lags far behind the near-future demands for skilled workers and includes only a small fraction of the number of women who will be needed in your war industries.

Pre-employment vocational training is helpful in that it gives the worker an industrial background and often serves as an opening wedge into factory employment. But the ideal place for training is in the plant itself, and an in-plant training program was also started soon after our defense efforts were launched. This program has also re-shaped its policies to include women more extensively in this system of training workers on the job and of upgrading to higher skills. This program is sponsered by the Training-Within-Industry-Section of the War Production Board and the Apprenticeship Training Section of the U. S. Department of Labor.

The need to train women rapidly and extensively is urgent, since it seems likely that by the time war production reaches its peak several million women will be required on assembly lines and machines to help meet the President's blueprint for planes, tanks, guns, and ships.

The Women's Bureau has certain policies regarding the employment of women in war production and other services and I would like to sum them up for you. In the first place a great many women, perhaps as many as 2,000,000 have been or may be thrown out of work through the curtailment and conversion of civilian production. They should be re-employed before new women workers are brought into the labor force. Then there are another 1,000,000 unemployed women who are registered with the public employment agencies as seeking work and who could probably be utilized. After these two groups are absorbed, we may/look to the new workers, first perhaps to the 700,000 young women who will be coming out of school this June. As for housewives, we feel that women should not be encouraged to work in war industries, or in fact in any occupation, if their employment means an unnecessary hardship on home and children. If a woman has one or more children who are not dependent on her for support, she may rest assured that her home duties are her finest contributions to her country as well as to her family.

But I believe when occasion warrants that at least 2,000,000 new women workers could be readily drawn into the war program with little disturbance to family life. In so far as possible they should be recruited from women who do not have children under 10 years of age.

Texas will have a large share in the Nation's aircraft production, and aircraft is an industry which is rapidly turning to women for its labor supply.

Women can do at least half of the work in aircraft assembly; and at least three-fourths of the assembly work on aircraft instruments. On some operations women are more satisfactory than men. With training they could do many more of the operations. Here in Texas one large plant manufacturing and assembling bombers had about 500 women production workers last February, more than three times as many as they had in December. The management expects ultimately that women will number half of the plant's total production force. They are paid 50¢ an hour for a 40-hour week, time and a half for overtime, with slightly higher rates for night work. After three months the pay is increased 5¢ an hour. The regular work week is 48 hours.

Another large aircraft plant in Texas still under construction, will do only final assembly work on all metal bombers. It is reasonable to expect that women will be employed there on a variety of assembly jobs.

I am glad to call your attention to examples of encouraging trends in your own State before indicating some of the disturbing aspects of the emergency period that may be found here as well as in all other States--in fact, wherever certain employers are ready to seize an opportunity to undermine labor standards.

In the performance of their work in war production and other services women have many realities to face which affect their well-being. For example, in a time of great national crisis our labor standards will be strained to some degree. One of the splendid characteristics of this nation is its flexibility in meeting any set of circumstances. At the same time we must be ever watchful to see that in adjusting labor standards to an enlarged production program, we do not cause a breakdown in these standards. Any essential adjustments should be for stated periods and every effort made to return to the standards prescribed by law as soon as possible. The remedy does not lie in a downward revision of State labor laws, and I hope you will be on the alert to examine any bills which come up in your State legislature calling for a lowering of labor standards.

The war emergency must not be used as an excuse to freeze labor standards already below a practical minimum. Men and women employed in the manufacture of goods for inter-state commerce are covered by the Federal Fair Labor Standards Act. Even to the Federal wage and hour law there are exceptions. One exception worth noting at this point concerns the canning industry. Certain types of canning are not subject to the same Federal wage and hour regulations as other branches of manufacture. This means that the cannery workers in this and other States who will help feed the Army and civilian population will not be assured a basic minimum pay. You can understand what this means when you realize that half of the women workers in tomato canneries in Texas were earning 15¢ an hour, and that most of the women in citrus fruits and juices were earning 25¢ an hour, according to a Women's Bureau study of 39 plants made in the fall of 1939.

But many thousands of restaurant, hotel, laundry workers, retail store employees and office workers, barber and beauty shop, farm and domestic workers, for example, are not protected by the Federal wage and hour provisions because they are in intra-state business. Their average weekly earnings are generally below those of workers in interstate industry, in some cases, far below.

A study of the candy industry in Texas, made last year by the Women's Bureau, showed that 39 percent of the women workers earned less than 30 cents an hour, the minimum rate established by the Fair Labor Standards Act. The average earnings for the small proportion of women employed in the candy industry 52 weeks of the year were about $12 a week and $600 a year. The study was made in San Antonio, Houston, El Paso, Ft. Worth, Dallas and Farmersville. Earnings were higher in Georgia and California, the other areas studied.

Texas is not one of the 26 States with a minimum-wage law for women workers in intra-state industries. A 9-hour day, 54-hour week law with certain exceptions and special provisions is the basic regulation in Texas for women working in industries doing business entirely within the boundaries of the State. There are no restrictions on night work for women and no guarantee of one day of rest in seven.

As you well know, low income people spend their money largely for food, clothing and rent. I scarcely need to remind you that the upward trend in living costs during this war period, despite the Government's efforts, have seriously affected these basic items in the workers' budget. From February 15, 1941 to February 15, 1942, living costs have increased in the city of Houston by 11.6 percent, a greater increase than for Washington, D.C. or New York City.

The facts pile up and the conclusion is inescapable:-- Thousands of women do not earn enough for the essentials of living. This stands out in sharp relief during a crisis like the present, which is characterized by rising prices, but not by correspondingly increasing wages for the rank and file of workers.

We know that insufficient pay causes a vicious cycle of troubles. Inadequate wages mean lack ~~lack~~ of the essentials of life, undernourished bodies, depleted energies, lowered efficiency. Inadequate wages result in smaller benefits when workers are injured, unemployed, or retired because of old age. Insufficient wages are at the root of our relief problems in this country, and mean that tax payers in the final analysis must subsidize firms that fail to pay their workers enough to live on.

Is it any wonder that a constant struggle is waged by workers, by the Government, by socially minded groups such as this one to pull up wages to a fair level? Nor must I neglect to give credit to progressive employers who do pay their workers adequately. Their influence in pointing the way is an important factor in the wage situation for women in a community.

I wish to touch the highlights of other labor standards before concluding this discussion. There is need for constant vigilance in the maintenance of safety and health standards in the factories on war production, because of the increased exposure to hazardous operations or substances, and because of the many new and inexperienced workers. Authorities say that during the emergency period accidents have increased. Unless every care is taken to promote a better safety program there may be great loss of life--particularly in ammunition plants--and also a set-back in production.

In a time like this, requiring considerable migration of labor, effort must be made to safeguard not only working conditions but also the living conditions of women in war work. There is the possibility in our supreme effort to turn out war equipment with phenomenal speed that our attention may be diverted from such important problems as adequate housing and wholesome recreation for women workers in industry and other services.

The rapid growth of plants to handle large war contracts,-- the vast new industrial developments in small-town or rural areas -- the migration of workers-- a congested population in many localities without proper facilities -- and the rising cost of living -- all these trends complicate the adjustment of working women to wartime conditions.

The Women's Bureau has made surveys of the community facilities in some of the typical areas with defense impacts. We have found some unsatisfactory livind conditions for women, which are a definite cause of labor turnover and decrease in output. Therefore we have prepared a handbook on standards for recreation and housing for women as war workers. This will be helpful to persons concerned with the welfare of workers in industrially inflated communities.

I believe the members of this group are deeply interested in all these questions. I believe you feel it is the responsibility of local forces to help with the solutions. I think we all agree that, in our concern for the Nation's grave problems and the world's tragic conflicts, we must not overlook the challenging needs on our very door steps. Victory begins at home and includes the safeguarding of many groups--among others the women who are now such an important part of our labor force. Thus a dovetailing of all forces concerned--employers and workers, public and private agencies, and an educated public opinion--are imperative to prevent loss of social gains. I know your fervent desire, as that of all other true Americans, is to have a vital part in winning this war and winning the peace afterward, in preserving our democracy and in defeating the tyranny that now threatens the freedoms of all people.

up

1942

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WOMEN'S BUREAU
SEP 21 1942
DEPARTMENT OF LABOR

AUTUMN 1942 VOL. XXII, No. 3

Small Business

Its Contribution to the War Effort and Problems

Women in War Industries

Their Increasing Role in the Production Program

Pipe Lines

System Expanding to Meet War Demands

Published Quarterly by

THE
NEW YORK TRUST
COMPANY

Indications

	1942	*1941*	*1940*	*1942*	*1941*	*1940*
	BANK DEBITS—N. Y. CITY[1] (Billions of Dollars)			BANK DEBITS—OUTSIDE N. Y. CITY[1] (Billions of Dollars)		
MAY	17.0	16.1	14.5	31.3	27.5	22.7
JUNE	17.4	17.3	13.1	32.7	28.7	21.9
JULY	...	16.3	13.6	...	28.5	22.3
SEVEN MONTHS	...	111.2	98.9	...	187.0	154.9

	SHARES TRADED—N. Y. S. E. (Thousands)			BUSINESS FAILURES[2] (Number)		
MAY	7,229	9,667	38,965	955	1,119	1,238
JUNE	7,466	10,462	15,575	804	970	1,114
JULY	8,374	17,873	7,305	764	980	1,175
SEVEN MONTHS	60,166	81,594	134,272	6,387	7,610	8,294

	STOCK PRICES[3] (Average, Dollars)			BOND PRICES[4] (Average, Dollars)		
MAY	33.12	39.73	43.48	95.64	94.22	87.87
JUNE	34.20	40.95	39.99	95.50	94.80	90.14
JULY	35.54	43.01	41.64	95.76	95.04	90.96

	IMPORTS* (Millions of Dollars)			EXPORTS* (Millions of Dollars)		
APRIL	234	287	212	682	385	324
MAY	...	297	211	...	385	325
JUNE	...	280	211	...	330	350
SIX MONTHS	...	1,594	1,294	...	2,185	2,067

INDEX FIGURES OF BUSINESS ACTIVITY[5]

	FACTORY EMPLOYMENT 1923-25=100			INCOME PAYMENTS (VALUE) 1935-39=100		
MAY	137.0	124.9	102.8	162.2	133.6	112.0
JUNE	139.9	128.7	103.9	p165.4	137.0	112.1
JULY	p144.1	133.3	105.1	...	138.9	112.8

	FREIGHT CAR LOADINGS[6] 1935-39=100			PRODUCTION—DURABLE GOODS[6,7] 1935-39=100		
MAY	143	135	106	237	190	124
JUNE	141	139	111	243	195	133
JULY	142	138	110	p251	199	136

	CONSTRUCTION CONTRACTS AWARDED (Value) 1923-25=100			DEPARTMENT STORE SALES[6] (Value) 1923-25=100		
MAY	158	101	64	108	105	89
JUNE	193	117	74	104	104	91
JULY	p208	139	85	p117	115	92

Sources: [1]Federal Reserve Bulletin. [2]Dun and Bradstreet, Inc. [3]Dow-Jones and Company, Inc., closing quotations, dollars per share—65 stocks. [4]New York Stock Exchange, all listed bonds, end of month. [5]Federal Reserve Bulletin. Figures adjusted for seasonal variation. [6]Average per working day. [7]Industrial Manufactures—physical volume. p—Preliminary. *General Imports and General Exports including Reexports.

Note: Back figures are brought into agreement with occasional source revisions.

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The INDEX

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Small Business

Its Contribution to the War Effort and Problems

The integration of small business in the United States into the war production program has not yet been accomplished to the satisfaction either of most small businessmen or of those in charge of the war program. The importance of achieving this is not lessened because neither England nor Germany seems to have made any greater progress at a corresponding stage in their war preparations.

Small business in this country normally accounts for about one-third of production in manufacturing industry and a considerably increased share of this output may well be needed to insure victory. Moreover, those small manufacturers unable to convert to war production or to continue their normal output face a bitter struggle for survival, as do many of the nearly 2,600,000 small businesses engaged in distribution or services in the midst of the inevitable dislocations of the economy in total war. Some distributive and service trades have already felt the pinch of priorities, shortages of goods to sell, and curtailment of use of services. Government authorities have pointed out that virtually all will be affected as the war effort continues to expand. The perpetuation of these units "is of national import . . ." because small business has long been considered a bulwark of the American system of free enterprise. Successful operation of small businesses throughout the nation is generally accompanied by a diffusion of economic power, normally gives to both producer and consumer a wider latitude of choice, and, insofar as it affects political power, helps to make possible the continuation of civil liberties.

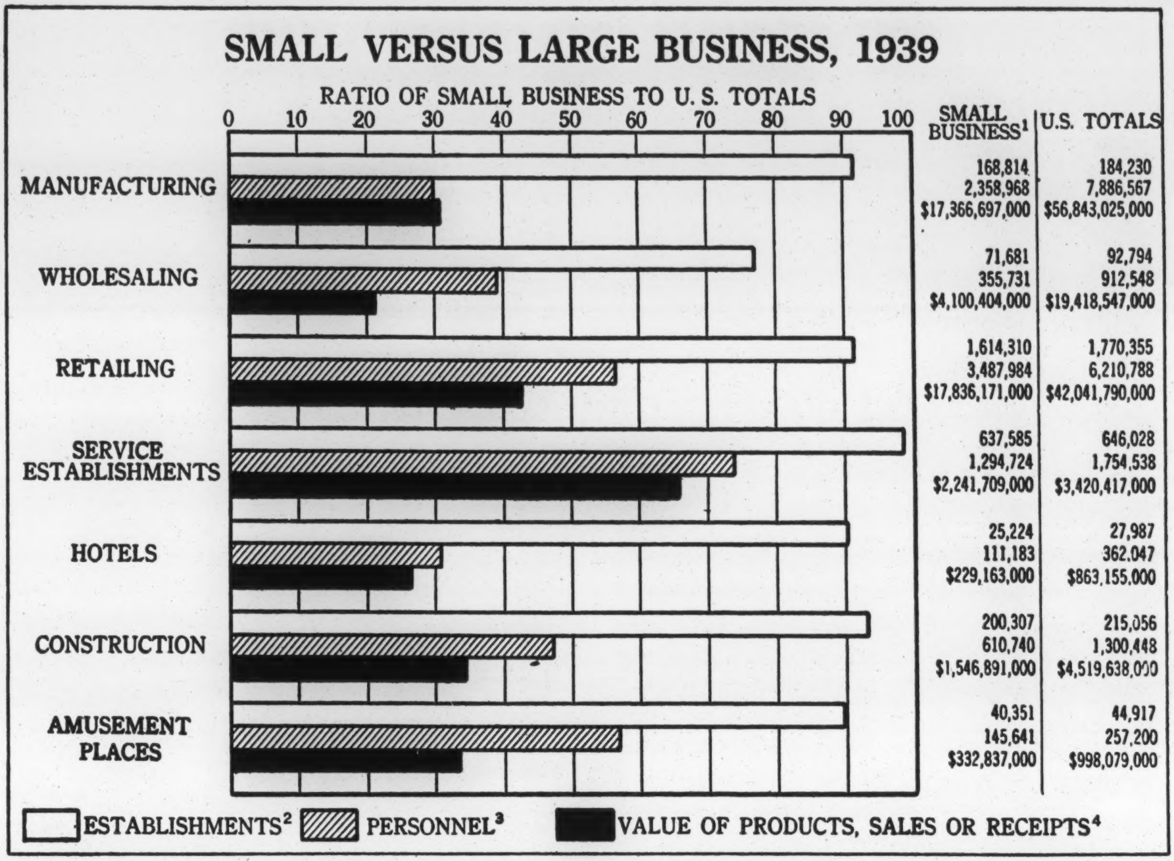
In addition, its survival will be an important factor in restoring employment after the return of peace. Small business units in 1939 furnished employment to more than 8,350,000 people.

Small Business Surveyed

The United States Department of Commerce defines small business thus: Manufacturing plants with 100 employees or less; wholesale establishments with less than $200,000 annual net sales volumes; retail stores, service establishments, hotels, places of amusement, and construction establishments with annual net sales or receipts of less than $50,000.

On this basis, about 93 per cent of the total business concerns of the nation are classified as small. These units employ about 45 per cent of the workers and transact about 34 per cent of the business of the country, including 9 per cent of annual manufactures.

According to the Department of Commerce, the United States has more than 2,750,000 small business establishments. Of these, about 169,000 are manufacturing concerns. The remainder are classified thus: 72,000 wholesalers, 1,614,000 retailers, 638,000 service organizations, 200,000 construction companies, 40,000 places of amusement, and 25,000 hotels.



	SMALL BUSINESS[1]	U.S. TOTALS
MANUFACTURING	168,814 2,358,968 $17,366,697,000	184,230 7,886,567 $56,843,025,000
WHOLESALING	71,681 355,731 $4,100,404,000	92,794 912,548 $19,418,547,000
RETAILING	1,614,310 3,487,984 $17,836,171,000	1,770,355 6,210,788 $42,041,790,000
SERVICE ESTABLISHMENTS	637,585 1,294,724 $2,241,709,000	646,028 1,754,538 $3,420,417,000
HOTELS	25,224 111,183 $229,163,000	27,987 362,047 $863,155,000
CONSTRUCTION	200,307 610,740 $1,546,891,000	215,056 1,300,448 $4,519,638,000
AMUSEMENT PLACES	40,351 145,641 $332,837,000	44,917 257,200 $998,079,000

1—Small business: Manufacturing plants with 100 employees or less; wholesale establishments with less than $200,000 annual net sales volume; retail stores, service establishments, hotels, places of amusement, and construction establishments with annual net sales or receipts of less than $50,000.

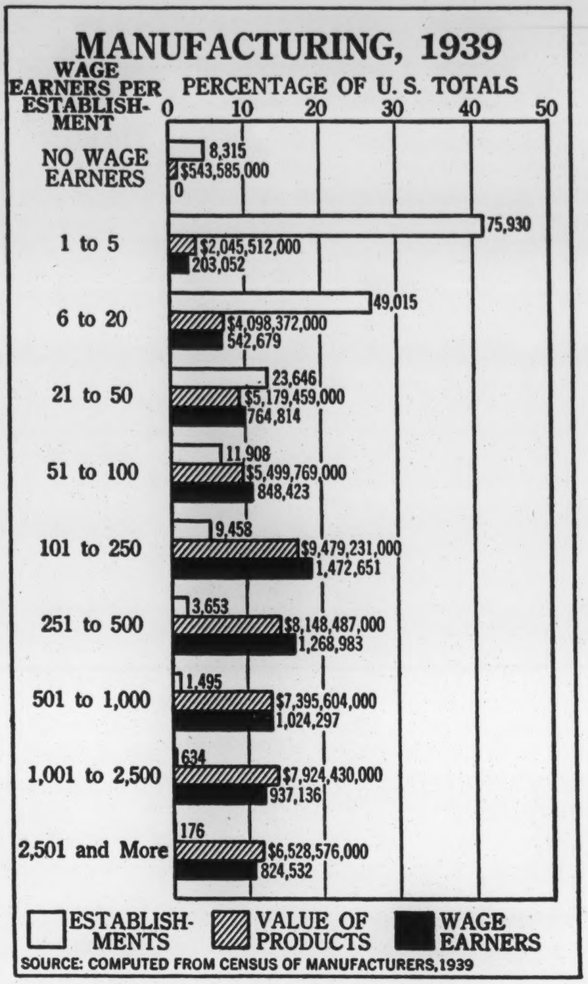
2—Number of establishments.

3—Proprietors and employees, except for manufacturing which includes just manufacturing employees.

4—Value of products for manufacturing; net sales of wholesalers and retailers; net receipts of service establishments, hotels, construction, and places of amusement. The aggregate of the dollar totals are not significant because of duplication within some totals; e.g. manufacturing—and the differences in the functions performed by the various industry or trade groups; but the total for each classification affords a basis for a measure of the proportion of the value represented by the smaller concerns in each classification. The total of personnel affords a measurement of the importance of these classifications in our economy.

Source: Computed from 1939 censuses of manufactures and business.

None of these groups can escape the difficulties which total war involves. Since priorities must be given to military and naval needs, many small manufacturers that cannot convert to war production will be unable, it is predicted, to obtain sufficient raw materials to maintain their volume of output. Part of these may be forced to close down their plants. The flow of goods to wholesalers and retailers in some lines already has ceased or diminished to a trickle, as, for instance, to the tire and automobile distributing agencies. Other units in these groups appear certain to experience similar shortages of goods to sell. Private building, of course, has been materially reduced. The concerns engaged in furnishing services in some lines report decreases in the number of their customers. So far, however, the effect in most of these groups has been uneven, for some small businesses have been benefited by war orders and increased purchasing power, while others have suffered through curtailment of raw materials or stocks of merchandise or through a reduction in the demand for services.



MANUFACTURING, 1939

SOURCE: COMPUTED FROM CENSUS OF MANUFACTURERS, 1939

Small Industry and War Contracts

Of the 184,000 manufacturing concerns of the country, it has been estimated that the facilities of only about 45,000 can be converted to war work. Yet the number of small manufacturing concerns alone totals about 169,000. Thousands of these are already at work on war materials, but many more will probably never receive a war contract.

It will be noted from the chart on page 50 that small concerns produce about 30 per cent of the nation's manufacturing output in terms of value and employ about 30 per cent of the wage earners in manufacturing.

More than 90 per cent of all the establishments manufacturing apparel and finished fabrics and more than 60 per cent of those making textile-mill products are small business concerns. Small units in these two classifications number more than 20,000. As Donald Nelson, Chairman of the War Production Board, points out, there is no reason why these small plants cannot get war contracts, and many of them have already done so. The same condition exists in a number of other lines of manufacturing. For example, more than 85 per cent of the concerns engaged in manufacture of food and kindred products employ fewer than 20 people each. In such fields as textiles and clothing, limits have been placed by the War Production Board upon the total quantity ordered from individual concerns. Moreover, in most instances, these small units can complete the entire operation involved in such war contracts.

In some other lines, such as the metalworking trades, conditions are different. Production of many of the essential weapons of modern warfare, when time is of the essence, requires far larger enterprises than peacetime manufacturing does. To build a battleship, for example, necessitates the employment of 6,000 or more workers. Yards building destroyers ordinarily must have upwards of 2,000 people on the payroll at the peak of construction. Submarines require some 700 or more. Construction of tanks, even if only one a month is built, involves the labor of 600 or 700 workers. Manufacturing aircraft, particularly huge bombers, obviously requires large plants. The agencies responsible for letting contracts for such weapons and for getting production under way with the least possible delay found the necessary facilities and management in large enterprises. Organization of small units for these tasks at the outset would naturally have entailed confusion and delayed the program.

About 28,000 concerns are engaged in metalworking in the United States. According to Stacy May, of the War Production Board, approximately 17,000 establishments in the chief metal-consuming industries employ 20 workers or less, yet their share of the total value of products manufactured in these industries amounts to only a little more than 4 per cent. Comparison of the enormity of the operations involved in producing many basic items of war material and the size of the plants themselves indicates some of the difficulties confronting small units in their endeavors to obtain primary war contracts. Subcontracting and pooling of facilities are among the methods applied in the attempts to overcome these difficulties.

Subcontracting

In subcontracting, the holder of the prime contract engages the services of other establishments, usually smaller units, to produce parts for which their plants are equipped. This method has been extensively employed and its use is increasing. For instance, one maker of large bombing planes placed 97 subcontracts totaling $1,444,000 in 1939; 597 subcontracts totaling $22,939,000 in 1940; with an estimated total of $100,000,000 in 1941. Another example of how far subcontracting extends the range of establishments at work upon war material is furnished by the Chrysler tank arsenal. More than 700 firms in 130 cities in 20 states are suppliers, in this instance, to the holder of the prime contract. Many of these suppliers, in turn, buy materials, supplies and finished goods from hundreds of other concerns.

War Production Board Chairman Nelson pointed out, in a letter sent to all prime contractors last spring, that "some prime contracts can be subcontracted as much as 90 per cent. Every prime contractor should consider having an established subcontracting department. Subcontractors should be given engineering assistance. Plants with as few as five or six machines can and should be used in subcontracting. The War Production Board has established field offices throughout the United States, now grouped in 13 regions. One purpose of these offices is to effect the fullest and most efficient utilization of facilities within their areas. For this purpose, they maintain records of machine tool equipment and other facilities of manufacturing establishments. I urge you to make your subcontracting needs known to the nearest office. With the future of our country at stake, with our armed forces in immediate need of more weapons, imagination and boldness are called for on the industrial front. Increased subcontracting may swing the balance. Production lines are battle lines. Let's use all the production lines we've got."

Pooling—York and Other Plans

A number of successful arrangements to pool war production have been reported. One of the earliest of these is a cooperative community plan adopted in York, Pa. This city of about 66,000 population has some 110 manufacturing plants of which 70 employ fewer than 100 workers and only 5 employ more than 500. Practically all of the plants in York are at work on war production, according to William S. Shipley, Chairman of the Defense Committee of the York Manufacturers' Association, who estimated in December that from 70 to 80 per cent of all orders booked by York industries were for war materials. Among the basic principles of the York plan are to educate the people of the community to recognize the necessity for complete cooperation in the war program, to interest and assist small manufacturers in engaging in subcontracting, to divert into productive channels machine operators and mechanics engaged outside the metalworking industry, and to assist in surveying labor potential to meet abnormal production.

In Kansas City, Mo., what is known as the Holland plan has also been successfully operated. There, a cooperative corporation, the Mid Central Associated Defense Industry, was organized in July, 1941, with 23 members originally and provision for a total of 100. In this enterprise, each member firm acts both as a prime contractor and a subcontractor, estimating its own costs for the part of the contract allocated to it. Their original contract was for production aggregating $250,000, and is reported to be the first obtained by a pool.

Similarly, in San Jose, Calif., local machine shops set up a corporation, San Jose Manufacturers, Inc., to enter bids for contracts. In December, 37 plants were members of the pool, with contracts aggregating more than $2,000,000.

Among other instances of pooling facilities reported is the Defense Manufacturing Co., of San Rafael, Calif., where a number of small concerns banded together to list equipment that could be used for war production.

Characteristics necessary to such war-production pools have been outlined as follows:

1. They should have financial responsibility acceptable to the procurement officers of the armed forces.
2. Centralized management.
3. Services of a methods engineer.
4. Working capital sufficient to finance organization and overhead.
5. A contract negotiator, experienced and acquainted with Government procedures.
6. Membership of firms having similar or complementary equipment.
7. An inventory at all plants covering their capacity and the types of their machines.
8. A prospectus of their plan.

Smaller War Plants Corporation

These examples showing how small units have been successful in obtaining war work apply, however, to relatively few of the total number of such plants in the United States. To assist the far greater proportion of those not yet participating in the war production program, Congress established, in July, the Smaller War Plants Corporation, with a capitalization of $150,000,000.

In announcing the formation of the Smaller War Plants Corporation, War Production Board Chairman Nelson stated: "It has the power to accept prime contracts from war procurement agencies. It can take these prime contracts and split them up, subcontracting with small business firms for the production of component parts. It will be able to deal effectively with pools, not only because it can itself take these prime contracts, but also because it can help provide the pools with engineering and financial assistance, can help manufacturers to rehabilitate old machinery, and in certain cases may be able to help manufacturers acquire vitally needed new machinery."

Mr. Nelson added: "We must not, of course, expect this Corporation or the legislation under which it will operate to be a panacea which will solve all the problems of small businessmen. It is unfortunately very likely that the number of small business firms which we can help in this war will be smaller than the number we cannot help.

"We are fighting a war and the War Production Board is a war agency. As far as the placement of war orders is concerned, the controlling factor must be the ability of the manufacturer to deliver what the Army and Navy want, at the time when the Army and Navy want it, and according to the Services' specifications. What we have in the Smaller War Plants Corporation is a mechanism to help us increase the total quantity of essential goods needed in this war, rather than a relief agency. If it should unfortunately develop that outright relief measures for small business are necessary, it must be realized that a mechanism other than the Smaller War Plants Corporation must be found for extending such relief."

Under the Smaller War Plants Corporation, it is hoped to utilize the smaller factories in manufacture of relatively simple war items, to extend subcontracting, and to convert small plants to essential civilian production.

Distributive Services

Whatever measure of success attends the efforts toward conversion to war work of the thousands of small industrial plants not yet participating therein, there must still be considered the difficulties of the nearly 2,600,000 small business institutions engaged in distribution and services of various kinds. Among these are some 44,000 automobile dealers and 60,000 independent tire dealers who have been particularly hard hit by the curtailment of automobile production and the rubber shortage. While automobile dealers are still permitted to sell some new cars under rules laid down by the Government, their chief source of income currently is derived from maintenance and repair service. In addition to the independents, there are thousands of other tire dealers, since tire manufacturers own retail stores and the major oil companies in the past have sold tires through their company-owned filling stations. The total number of establishments in which tires are sold at retail has been estimated from 80,000 to 200,000. The income of all these has been cut off or reduced by the rubber shortage and no relief is in sight while the emergency in rubber exists.

Other distributive trades will be confronted soon with increasing difficulties resulting from shortages of goods to sell. War Production Board Chairman Nelson said last April that curtailment and limitation orders then being issued would "change the face of American industry." The time when those orders were to take effect is now being reached and many familiar manufactured products will no longer be made or marketed. These include radios, washing machines, vacuum cleaners, pianos, typewriters, refrigerators and dozens of other products. Last December, the Department of Commerce estimated that 12,000 of the 72,000 small wholesalers and some 360,000, or about 22 per cent, of the retailers were confronted with potential shortages in merchandise stocks because they handled products made from materials which have become or are likely to become scarce. The wholesalers, in addition to automotive parts and tire dealers, included those dealing in electrical merchandise, wiring supplies, petroleum, plumbing fixtures and iron and steel scrap, while among the retailers were filling stations, furniture—household—radio stores, hardware stores, automotive dealers, and lumber and building material dealers. Since the Department's estimate was made, a number of other lines have been affected by curtailment and limitation orders so that the percentage of concerns with actual or potential shortages in stocks is now probably much greater. The most numerous small retail establishments, however, are food stores, restaurants, taverns and similar places, which are not likely to suffer greatly.

Additional Difficulties

Important among other problems is a potential shortage of labor supply. All lines not actually engaged in war work are likely to be affected by the growing demands for man power by the armed forces and war industry, both of which will draw upon management of small business as well as its labor force. Those small businesses losing employes thus may be forced to call upon those not normally employed, including the women in the nation's labor reserve, described elsewhere in this issue of THE INDEX.

Another problem reported by many owners of small businesses results from the large number of reports and returns now required by the Federal Government. Employment of an auditor to handle these reports and returns often taxes the resources of the small businessman, while without such help some say they must spend a large portion of their time in paper work which they think is unnecessary in many instances because much information required on the forms is duplicated on others.

The fiscal policy of the Government, including mounting taxes, together with shortages of goods to sell, is seen by some small distributors as a very real burden at a time when the volume of retail trade is reduced. One small manufacturer recently told the Senate Finance Committee that under the tax bill on which the Committee has been holding hearings, the taxes of the company, engaged in war work, will require 87 per cent of its net income. To handle the war contracts, the company borrowed money from the Reconstruction Finance Corporation which it now cannot repay without taking cash needed for taxes. Another instance of hardship worked upon small business by Governmental policy is furnished by silver. Although the United States Treasury holds 3,331,000,000 ounces of silver, of which 1,361,000,000 ounces are unallocated, being neither in coins or pledged against silver certificates, a serious shortage of silver for war purposes exists while the supply for civilian use has been restricted and soon there will be no more available. As a result, silversmiths, jewelers and others are confronted with the possibility of closing plants for lack of a material which the Government holds in abundance.

Small Business Mortality

So far in the war effort, however, instead of an increase in mortality among small businesses there has been an actual decrease. Business failures in manufacturing and both wholesale and retail trade were considerably lower for the first six months of 1942 than for the comparable period in 1941, although failures in construction and commercial service were higher. The following table indicates that the rate of failures, as reported by Dun and Bradstreet, declined more for small businesses during the period than it did for large businesses.

While these figures showing a lower mortality rate among small businesses for the first six months of this year are encouraging, it should be noted that the critical period is just beginning:

Industry Group	*Jan.-June 1942*	*Jan.-June 1941*	*Per Cent Change*
Manufacturing	903	1,069	−16
Wholesale Trade	438	610	−28
Retail Trade	3,600	4,389	−18
Construction	394	356	+11
Commercial Service	288	278	+ 4
Total	5,623	6,702	−16
Size Group by Liabilities			
Under $5,000	3,077	3,835	−20
$5,000—$25,000	2,078	2,347	−12
$25,000—$100,000	388	435	−11
$100,000 and over	80	85	− 6
Total	5,623	6,702	−16

Experience Abroad

During the first few years of the British war production program, relatively few small plants participated. In aircraft manufacture particularly, England relied upon large factories operating chiefly on a self-sufficient basis. These included some new and well rounded out plants as well as the large older factories. Later a "farming-out" policy was officially adopted by the British Government. A measure of the wider participation that followed is given by figures showing employment in the production of aircraft. During the first three years of the program, when reliance was placed chiefly upon the large plants, employment in aircraft work increased from 15,000 to 60,000. In the first year following the farming-out action, employment jumped from 60,000 to 185,000. England now uses a "bits and pieces" system under which production has increased from around 20 per cent to about 75 per cent of capacity. In some of the shops, equipment as much as one hundred years old is being utilized. Pooling of plant facilities is extensively practiced.

Early in Germany's preparations for war, some 20,000 small plants were closed down and the machinery moved into larger quarters. When dependence upon large units was found not to be entirely satisfactory, Germany turned again to smaller units. Germany is also reported to be limiting subcontracting to plants within 140 miles of the prime contractor's factory.

Floyd B. Odlum, of the War Production Board, believes that the United States is "going to do far better" than England and Germany have done in utilizing the services of small business in war work.

Outlook

Small business in general is facing what many foresee as the most serious emergency in its history in the United States. The gravity and extent of the emergency depend largely upon the length of the war and the consequent demands upon the nation's resources. How many of the present small businesses survive will be determined by the initiative and resourcefulness of their management, as well as by those factors beyond their control and to be determined by the course of the war. It is to be hoped that more small manufacturing concerns will be able to participate in the war effort. The experience of other nations demonstrates that small business can contribute greatly to war production. Moreover, war work would make more certain their survival, considered essential to the preservation of free enterprise in this country. In certain fields of distribution, many small establishments handling products made from scarce materials will no doubt have to modify their businesses in order to keep their doors open.

The long term outlook for small business concerns able to survive seems brighter, therefore, than the immediate future which is clouded by war restrictions. With the provision, of course, that the United Nations win the war and the free enterprise system is preserved in this country, it seems probable that when peace returns the greatest demand in history for many products, particularly those now unobtainable or to be had in small quantities, will have accumulated. Helping to meet that accumulated demand should enable small business to resume its high position in the nation's economy.

* * *

Women In War Industries

Their Increasing Role in the Production Program

Since the days of Molly Pitcher, American women have played an important part in every war in which the United States has been engaged. The role of women in today's conflict, which, it has been estimated, requires 18 workers to equip and maintain each soldier at the front, promises to be far greater than anything previously known. Throughout the country, increasing numbers of women are helping to forge the weapons for the men of the United Nations.

Without counting other employment, 1,750,000 women are already working in war industries, as compared with a peak of 2,225,000 in the closing months of the last war. The number has more than tripled since the last quarter of 1941 and indications are that the rate of increase will be as great or greater until maximum war production is reached. Estimates of the number of women ultimately to be employed in war production in this country range as high as 5,000,000. The anticipated march of women to the factory front presents, along with the problems of recruiting and training, the problem of the alteration of the life of almost every community in the United States: it would transform, at least temporarily, the social fabric, and it might well bring permanent change to the nation's economy.

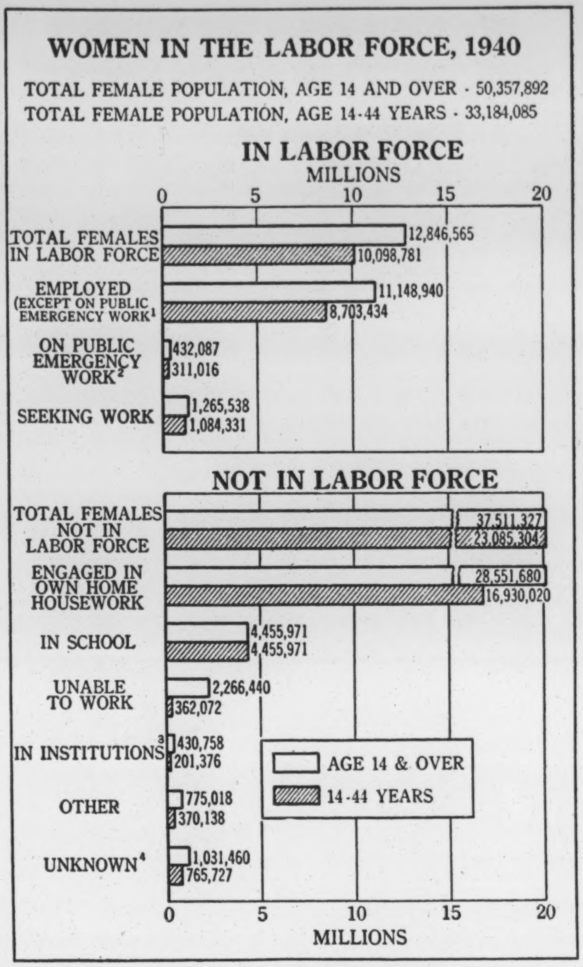
Paul V. McNutt, head of the War Manpower Commission, has already told the women of the country that their services are to be utilized more fully in the war production program. On September 4, he announced the creation of a women's policy commission to assist in mobilizing women for war work, stating that one out of every six women over 18 years of age will be needed for the war effort. In April, President Roosevelt had announced that the government was considering the voluntary registration of all women between the ages of 18 and 65. On May 1, however, such registration was temporarily abandoned as, at that time, there were more women volunteering for war work than there were jobs. The subject was again officially approached the latter part of July, when President Roosevelt ordered the formulation of a National War Service Bill, which is expected to include the registration of women who can be utilized in the war program. Several drafts are said to be in preparation for submission to the War Manpower Commission prior to their introduction into Congress. Parallel with the legislative side of the picture has been the work of the United States Employment Service, where there were approximately 1.5 million women registered for work last May. At that time, Mr. McNutt said that the Employment Service was notifying its 1,500 full-time field officers to recruit women for war production when there was need for them as an additional source of labor, when employers were willing to hire women, and when the jobs could not be filled by women already registered in the local offices.

Man Power Shortage Predicted

The Bureau of Labor Statistics has estimated that by late 1943 there will be a shortage of some six million workers and most of these jobs will be filled by women. The present problem is chiefly one of local labor shortages which, due to the usually concurrent shortage of housing facilities, cannot be solved solely by transporting workers from areas of unemployment. The partial solution to such local labor shortages is being sought in the voluntary registration of women in these areas, the object being to employ the wives and sisters of workers, even though they might be less efficient with their housework to perform, rather than strain already overcrowded housing facilities by "importing" men. In the Detroit area, such voluntary registration of women was conducted early in August by representatives of the War Labor Board, the United States Employment Service, and several other agencies. It is predicted, however, that even if the 80,000 qualified women needed are found by this registration, the Detroit area will face a labor shortage of 56,000 in November.

Brigadier General Lewis B. Hershey, Director of the Selective Service System, appearing in February before a special Congressional Committee studying the utilization of the nation's man power, asserted that registration of women as well as men should be "definite, positive and compulsory."

According to the War Manpower Commission, 12,500,000 people were employed on July 1 in direct war work. During the first half of 1942 a huge increase took place in this field: 2,100,000 during the first quarter and 3,500,000 during the second. Thus, in six months, war industries absorbed 5,600,000 workers, and in some localities, as in Detroit, it had already become necessary to turn to the reserve of women workers.



WOMEN IN THE LABOR FORCE, 1940

TOTAL FEMALE POPULATION, AGE 14 AND OVER · 50,357,892
TOTAL FEMALE POPULATION, AGE 14-44 YEARS · 33,184,085

1—Persons who at any time during the week of March 24-30, 1940, worked for pay or profit (except on public emergency work) or assisted without pay in a family enterprise; or who, during that week, had jobs (except on public emergency work), businesses, or professional enterprises at which they did not work because of vacation, industrial dispute, bad weather, temporary illness, or a layoff not exceeding four weeks with instructions to return by a specific date.

2—Includes WPA, NYA, CCC, etc.

3—Inmates of penal institutions; hospitals for the mentally diseased or defective; and homes for the aged, infirm and needy.

4—Includes some persons whose activity during the week of March 24-30, 1940, could not be determined definitely. Preliminary evidence concerning the characteristics of such persons indicates that the great majority of them were not in the labor force.

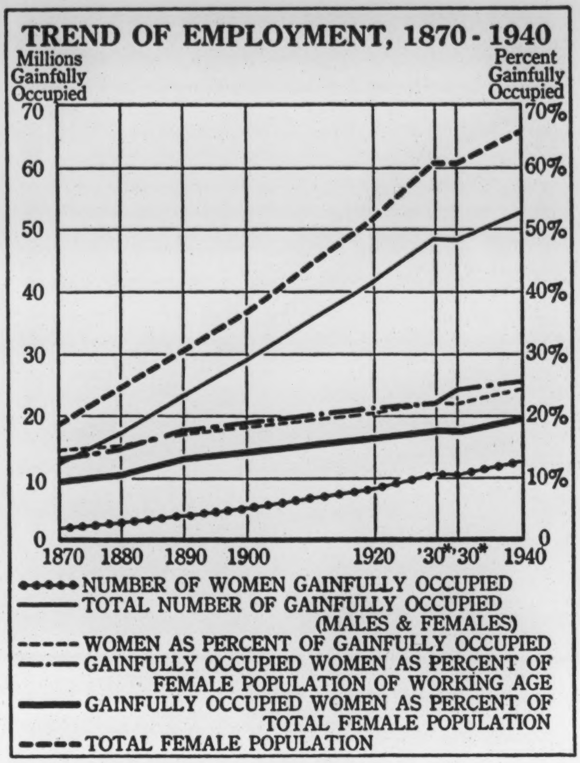
Source: Bureau of the Census.

By July 1, there were some 13 million women employed in the United States, an increase of 600,000 in six months. Of these, as noted, 1,750,000 were working in war industries. By the end of 1943, according to the Office of War Information, total civilian employment is expected to reach 53,000,000, of whom 18,000,000 will be women. This will require an increase in employment of about 5,000,000 women.

Woman Power Reserve

As can be seen from the chart on page 59, more than 22,000,000 women, between the ages of 14 and 44, who are able to work are normally not members of the labor force.

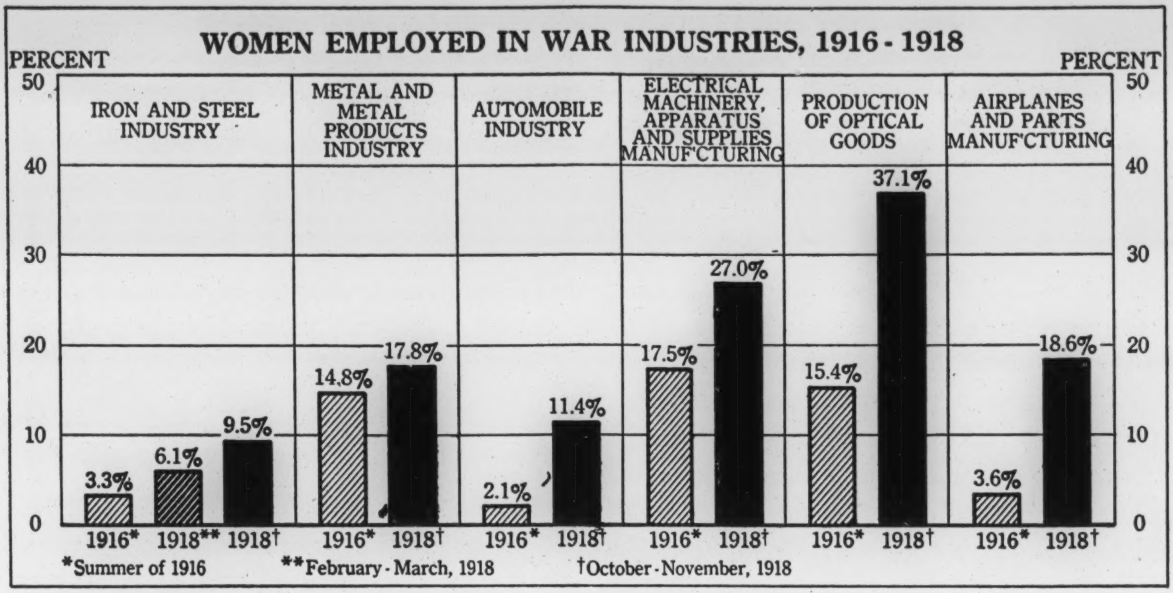
It will be noted that of this potential labor reserve of more than 22,000,000 women, almost 17,000,000 are ordinarily engaged in housework in their own homes, while 4,500,000 are in school. No figures are available to indicate how many of the 17,000,000 normally engaged in housework would be excluded from the reserve labor force because they have children under ten years of age, but it has been estimated that perhaps 12,000,000 of these women are in this category. On the basis of these estimates, there are from 6,000,000 to 10,000,000 women in the labor reserve available for war work if the need is great enough.


TREND OF EMPLOYMENT, 1870 - 1940

* 1870-1930 refers to population 10 years of age and over; 1940 figure is for those 14 years of age and over. The second 1930 figure is for population 14 years of age and over and is comparable with 1940.
Source: Bureau of the Census.

In 1940, women comprised almost one-fourth of all those gainfully occupied in the United States. Should women be recruited for war work from the 22,000,000 not normally employed, in the same proportion as those ordinarily in the labor market, almost 6,000,000 women would enter employment and if the demand and need were great enough, this figure would probably be considerably higher. Miss Thelma McKelvey, of the Labor Divison of the War Production Board, estimated a few months ago that 8,000,000 women not normally employed "could be inducted into a total war effort."

From the point of view of age distribution, census figures show that the most strongly represented age group for women employees is from 20 to 30 years. About 2,100,000, or 45 per cent, of the 4,680,000 women in the 21-24 year age group are now in the labor force, as are 1,992,000 or 38 per cent, of the 5,174,000 women in the 25-29 year group. From this it is evident that a good proportion of the new recruits for labor must be women of 30 years or more, or girls in their 'teens.



WOMEN EMPLOYED IN WAR INDUSTRIES, 1916 - 1918

Source: Bureau of the Census.

World War Experience

During World War I, women were not employed in war industries in large numbers until after military conscription became extensive.

The industries that normally employed women in great numbers, such as those producing food and clothing, supplied the war industries in 1917-18 with thousands of women who had experience in the operation of machinery. Many married women, some of whom had been employed in factories before marriage, were attracted by the high wages and by the novelty of the work.

More than half the employees in the bag and shell loading plants in World War I were women. Women also worked in iron and steel foundries, while about half the companies reporting replacement of men by women at that time employed women in metal work. These plants produced shells, cartridges, machine guns and rifles, cannon and cannon mounts, aircraft, grenades, automobiles and tanks, and other war products.

After the Armistice, the employment of women in war industries was sharply reduced, falling from 13.9 per cent after the second draft in 1918 to about 10 per cent in 1919. However, the employment of women remained definitely at a 3.5 per cent higher level than it had been in 1914 when only 6.5 per cent of the wage earners were women. In 1929, 10.7 per cent of the employees were women, while by 1939 the percentage had risen to 13.5 per cent.

Women's Especial Capacities

Women are now engaged in actual war production at a variety of jobs. They help to make ammunition for small arms and artillery; assemble aircraft; inspect ordnance; manufacture precision instruments; make and assemble radio, telephone and other communications equipment parts; cut and stitch the silk in parachutes; produce and test gas masks; manufacture uniforms; make electrical equipment of many kinds; grind lenses and perform similar tasks in connection with the production of optical equipment; operate lathes, drill presses, punch presses, milling machines and other machine tools; weld steel and aluminum; make machine guns and small arms; and perform dozens of other tasks, simple and intricate, required in the production of modern war requirements. In February, after a survey of more than 1,800 occupations in 21 key war industries, the United States Employment Service found that women could perform about 80 per cent of war industry jobs, although they filled only about 8.5 per cent of them.

There are three chief limitations to the employment of women as productive workers in war industries, according to Miss Mary Anderson, director of the Women's Bureau of the United States Department of Labor:

"1. Women average in general about one-half the average man's lifting strength and about two-thirds of the average man's pulling strength.

"2. They are more susceptible to dermatitis and certain other health hazards in the presence of specific chemicals.

"3. They usually lack the basic mechanical knowledge and familiarity in the handling of tools and in working with metals and wood. This deficiency can be corrected by proper training and adequate experience."

Women have been found by Miss Anderson's bureau to excel in occupations requiring care and constant alertness, good eyesight, and the use of light instruments such as gauges and micrometers, but not calling for much physical exertion; tasks requiring manipulative dexterity and speed, but which permit the operator to set her own tempo and to work in a sitting position; duties requiring considerable skill but little strength either in handling parts or setting up machines.

In a study of four key war industries by the Women's Bureau of the Department of Labor, the proportion of women to the total force was found to range from 7 per cent to 83 per cent. The industries studied produced small arms and artillery, ammunition, aircraft, and precision instruments.

The Bureau of Economic Security, after a survey of a number of California plants, including an aircraft manufacturer, a radio manufacturer and a producer of electrical parts, reported that, in every plant where women were put on the assembly line, production per hour increased and costs per unit decreased. Among the reasons given was that competition between the sexes brought greater output by the men. On the other hand, some employers have found that putting both men and women on an assembly line creates a distraction which slows down production and that women, in general, are less regular in attendance. Others avoid placing men and women on the same job.

Conditions of Employment

In this country, work laws for women have been in force in more than half of the states. These laws, with various omissions and in varying degrees of rigidity, forbid night work, limit the work week, set up health regulations, and make other special provisions for the employment of women. Many of these laws have been stumbling blocks in the way of war production, and many of them have been relaxed since the United States entered the war. However, individual employment conditions have remained generally good. Many companies are reported to pay women on the same basis as men although only 17 of a total of 62 companies in a survey conducted by the Industrial Relations Division of Princeton University early this year stated that they paid equal wages to women for equal work. Most of the other companies reported a wage differential. Even in cases of equal production, market conditions and a greater investment in training in proportion to potential total working time are among the reasons encountered for the difference.

Alterations in plants to provide rest rooms and other facilities are necessary when companies employ women for the first time. Relocation and reengineering of jobs to avoid heavy lifting or climbing around machines are also necessary in some plants. Usually a seat must be furnished for every woman employee, and the job organized so that she can be seated for most of the working period. The use of uniforms, sometimes supplied by the company, has often been found desirable. Hair must be worn cut or be confined near certain machines. Often new hiring and training techniques must be devised when women are first employed on a large scale.

Women with children are given their choice of shifts in most instances and these are not usually rotated. It has been found that married women often prefer late afternoon and night shifts which permit them to be with their families during the day, although housework is said to lessen their factory efficiency. Plants are beginning to report the organization of nurseries for women with small children.

There has been some antagonism by labor unions to the hiring of women for jobs formerly held by men. Among their many reasons for objecting are their fear that the wage differential or an expanded employment reserve will force men's wages down, the difficulty frequently had in organizing women, the effect on the rotation of shifts and the fear of an overexpanded labor market.

Women in War Work Abroad

In the belligerent countries abroad, women have played an essential role in war production. Great Britain, for example, ordered compulsory registration of women for war work in 1941, and a far greater proportion of women are engaged in producing weapons and munitions than is so far the case in the United States. About 40 per cent of the workers in some of the British aircraft plants are women and the proportion has been increasing. Women comprise between 80 per cent and 90 per cent of the workers in many munitions plants. A large proportion of the industries have equal pay for equal work. A great deal is being done for women workers by the Ministry of Labor, which has attempted to improve working conditions, provide nurseries for the children of workers, and generally preserve the all-important health of the working class. The problem of what will become of the home while the father fights and the mother works has been partially solved in many cases by having one woman manage two households while the other works. In this way, two women are doing work formerly done by three people.

Compulsory registration of women in Canada began in 1940. There, more than 3,883,000 women have registered. Nearly all the inspectors in the munitions factories are women, while many others work at punch presses, milling machines, in tool-making departments, and in many other capacities.

In Russia, the number of women gainfully employed is reported to have increased from about 3,000,000 in 1928 to an estimated 11,000,000 in 1940, in addition to about 14,000,000 employed in agriculture. This increase, which is in keeping with original Soviet plans, has facilitated shifting to the shoulders of the Russian women a considerable share of the war production. Moreover, the entrance of women into war industries in Russia has been aided by the experience of the people in running public nurseries for the children of working women, the previous training of a large part of the women and because Russia has in the past twenty years, developed sturdy women. Of all women, the Russian women are probably the best suited by training and previous experience to enter war production.

In Germany, too, women are doing much to lessen the labor shortage. Although there is no way of checking the accuracy of facts from Germany, it is reported that 8,400,000 women were employed in Germany in 1941, of a total of 22,670,000 workers. Thus, about 37 per cent of the gainfully employed in Germany are women, who are mobilized as a division of the German Labor Front.

Conclusion

To meet the war production schedule which has been set for the nation, at least three million additional women will probably have to be employed in war industries. These must ultimately be drawn from the potential reserve of women not normally available as industrial workers; in other words, chiefly from the housewives and mothers of the country. It is likely that about one in every six women over 18 years of age must eventually accept employment. This will affect not only the way of life of the working women but that of entire families and communities. The changeover process may be difficult and the reversal of this process after the war will bring equally trying problems as our soldiers again replace the womenfolk in industry.

In general, it is apparent that women's participation in the industrial world is increasing and this trend will be carried over into peace times. Modifications in factory practices, especially of welfare and social natures, will have to be made. The more extensive experiences of Russia and England will afford considerable guidance in these matters. Progressive managements are meeting these needs and requirements with intelligence and a high sense of responsibility.

Of first importance, however, is the winning of the war, which requires that production schedules be met, and no way to accomplish this is apparent except through the employment of additional millions of women by the war industries. Through foresight and sound planning, it should be possible to avoid too severe resulting stress upon the social structure. Certainly, all proper precautions ought to be taken to this end.

Pipe Lines

System Expanding to Meet War Demands

Military operations and the rearming of the United States have thrown an unprecedented strain upon the country's facilities for the transportation of oil. Over the years, an exceedingly specialized transportation system has been built up to transport crude oil and distribute the refined products. Oil pipe lines play a primary part in this service. These pipe lines constitute a vast underground network, aggregating approximately 135,000 miles. One of the most important of modern transportation systems, it is also one of the least familiar to the public. Since the first pipe lines, only a few miles long, were laid in the 1860's, the system has been extended with the discovery of each new oil field, keeping pace with the nation's industrial development until it now reaches most of the major geographical areas, providing an outlet for every active oil well and helping to distribute the products of the refineries. In the last few years, the system has expanded into a number of new areas, thereby aiding greatly in the distribution of oil during the emergency.

The nation's supplies of petroleum, as indispensable as ammunition in modern warfare, are ample to meet both military and industrial requirements. Yet, today, almost unmanageable quantities of oil have accumulated at some refineries and storage centers while rationing is necessary in other areas because of a dearth of oil. This anomalous condition is the direct result of interference with and, in some instances, the interruption of the normal flow of oil by the war.

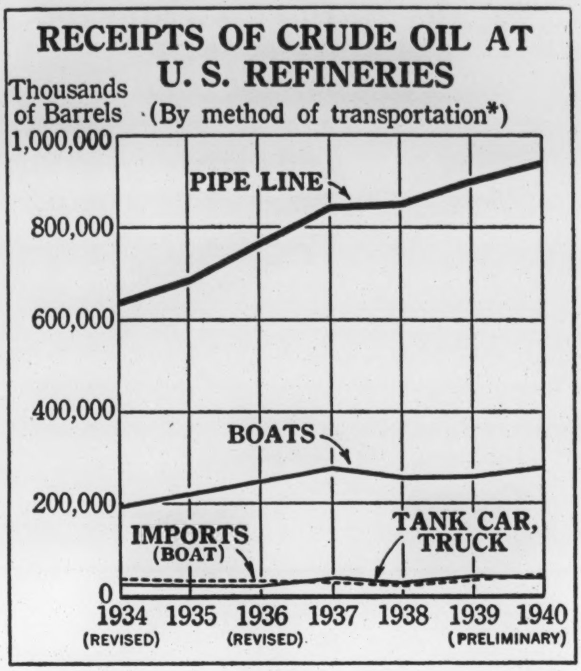
Oil Supply

Crude oil production throughout the United States during the first half year of 1942 was reported to total 680,000,000 barrels of 42 United States gallons, an increase of 15,000,000 barrels over the corresponding period of 1941, and only 6,000,000 barrels less than the output in the first six months of 1940, the greatest production for any first half year on record. Reports early in July of this year placed crude oil stocks at 251,311,000 barrels as compared with corresponding 1941 stocks of 255,567,000 barrels; gasoline stocks at 84,069,000 barrels as compared with 86,291,000 barrels, and residual fueloil stocks at 77,230,000 barrels as compared with 91,059,000 barrels. Total motor fuel requirements, domestic and export, (exclusive of aviation fuels) were said to be about 2 per cent greater than in 1941. While some increase in the demand for motor fuels took place in the early months of 1942, the United States Bureau of Mines estimated that the total demand for gasoline in May was about 10 per cent below that of May, 1941, largely as the result of gasoline and rubber rationing, and reports since then show this decline may have been accelerated. While detailed information covering domestic demands and exports of petroleum products is no longer available, the production and inventory figures show that the demand continues upward, except for gasoline. As the figures also indicate, there is no shortage of oil and much production is still on a proration basis. The country does face a difficult problem of oil transportation, which is of primary importance to the winning of the war.

Although oil is produced by about half the states, approximately 40 per cent of the country's output comes from Texas and Oklahoma. Many of the sources of supply, and especially the chief sources in the Southwest, are hundreds of miles from the industrial areas where much of the oil is used. For example, nearly 36 per cent of the nation's passenger automobiles and about 34 per cent of its commercial cars and trucks are operated in the 17 East Coast states where gasoline rationing has been effective. To these states, extending along the eastern seaboard from Florida to Maine, and to other eastern and middlewestern states where more motor fuels are needed, much oil from the wells in Texas and Oklahoma must be moved. Similarly, oil must be transported from the wells in other oil-producing states to industrial centers, normally far from the sources of supply. Two hauling operations are involved. Crude oil must be gathered from the producing wells and moved to the refineries where it can be converted to the multitude of forms demanded by modern industry and by modern warfare. Then the refined products must also often be hauled many hundreds of miles to their markets.

Transportation Agencies

Petroleum is practically the only product which normally employs in large volume four of the major facilities of transportation: pipe lines, ships, railroads and trucks. In ordinary years, pipe lines are by far the most important factor in both intrastate and interstate transportation of crude oil to the refineries, as the following chart shows:



Only the terminating method of transportation is reported. Often more than one method is used between well and refinery. This particularly is true of boat shipments, which usually originate by pipe line.
Source: Bureau of Mines.

It will be observed that a steady increase has taken place in the amount of crude oil flowing through pipe lines to the refineries, particularly in intrastate transportation. Likewise, it is important to note, as the Bureau of Mines emphasizes, that in the above chart only the final agency of transportation is reported, whereas often more than one method is used between well and refinery, especially in boat shipments, originating usually by pipe lines.

Pipe lines, however, in the past have not carried so large a proportion of refined oil products. In 1940, for example, pipe lines delivered a total of 939,732,000 barrels of crude oil to refineries but moved only 97,-

064,000 barrels of motor fuel from refineries. Tankers, on the other hand, transported 119,142,000 barrels of gasoline as well as 147,192,000 barrels of other refined products from Gulf Coast ports to East Coast ports, and 3,966,000 barrels of gasoline as well as 2,783,000 barrels of other refined products and crude oil from California to East Coast ports. Railroads in the five-year period from 1936 through 1940 carried an average of about 210,000,000 barrels of refined oil a year.

Oil can be transported over long distances most cheaply by tank ship, and for that reason the Eastern Seaboard received most of its oil before the war by tanker. Overland, the pipe line offers the cheapest method of moving oil, the cost amounting to several times that by tanker vessel. Again only roughly, railroad tank cars haul oil at a cost about three times that by pipe line. Tank trucks are the most recent development in the field and the costs are reported to be more variable than with the other forms of transportation. In all four forms, however, length of haul and other time and space factors enter importantly in the making of rates. Whatever the method used, loading and unloading can be accomplished by gravity or pumping, thereby greatly reducing handling costs and the idle time of the vehicle. Pipe line movement, of course, is continuous. Some tank vessels carry upwards of 200,000 barrels of oil averaging under 100,000 barrels. Railroad tank cars in some instances have a capacity of 300 barrels, but average 210 barrels, while the largest tank trucks have a capacity approaching 200 barrels, the average being much smaller.

In considering oil transportation, it should be noted that the oil industry supplies a very large part of the necessary facilities, except for the tank cars which are engaged on a rental basis. Of 143,140 railroad tank cars in service in September 1940, of which over 90 per cent were privately owned, 105,801 were in the petroleum movement, the balance being used for asphalt, acid, syrup and miscellaneous liquid commodities. Of 465 tank ships in service at the end of 1940, 441 were owned by oil companies, the remaining 24 being United States Navy tank ships. Tank trucks, while the most expensive method of transportation, are being used in increasing numbers for short hauls, although their number and tonnage carried are not available. All existing pipe lines are owned by the industry.

Operation of Pipe Lines

Thousands of people pass over pipe lines every day in the United States without being aware of the millions of gallons of oil flowing beneath them. Practically every one of the more than 350,000 active oil wells in the United States has an outlet for its output through a pipe line. Almost 55,000 miles of line are employed in gathering oil from the wells and carrying it through the gathering system to the trunk pipe lines. From trunk line stations the oil flows through more than 62,000 miles of trunk lines to more than 450 refineries and to marine terminals on the coasts. Some 12,000 miles of additional pipe lines carry refined oil products from the refineries to various distribution points in the marketing areas.

In many ways, the operation of a pipe line system resembles that of a railroad. Each has trunk lines, feeder lines, terminals, storage yards, switch systems, stations, dispatchers and communication systems. In the pipe line, however, the transporting equipment is stationary and only the load moves. Pumping stations keep the oil flowing through the pipes. These stations are ordinarily located about 40 to 80 miles apart, although they may be nearer together in hilly terrain or for certain types of oils. Most stations have storage tanks with a capacity averaging 50,000 barrels or more.

Often a number of different batches of oil, consisting of different kinds of crude oil and different grades of gasoline or other petroleum products, amounting sometimes to several million gallons, and each consigned to a different station, move consecutively through the same pipe line without interruption. By instruments in the station and by intercommunicating telephone, telegraph and teletype systems, station operators keep informed of the time when the various batches are to reach them. Dispatchers instruct the operators as to the route to be taken by the consignments and these are accordingly switched into connecting lines that carry them to their destinations.

The machinery seldom gets out of order, but when this occasionally happens, standby units are available or an entire station can be temporarily by-passed. The size of pipe in existing trunk lines varies from 6 to 12 inches in diameter while rate of flow or volume is regulated by adjusting the speed of pumps.

Development of System

The first interstate oil pipe line, extending from the Pennsylvania fields to the Atlantic seaboard, was completed in 1879. By the end of 1900, there were less than 18,000 miles of interstate pipe lines. A few years later, when eastern fields could no longer supply the market and production increased in the Mid-Continent area, pipe lines in Oklahoma and Kansas were connected to the eastern trunk lines. As new fields were discovered and old ones depleted, refineries extended their lines and built new ones to meet their requirements. In 1911, refineries east of the Mississippi drew about 30 per cent of their crude oil supply from Mid-Continent fields. By 1914, this amount had increased to about 60 per cent and today fields west of the Mississippi supply more than 80 per cent of eastern refinery requirements.

Total pipe line investment in carrier property only, including accrued depreciation, at the end of 1939 amounted to $829,646,000, as compared with $758,172,000 at the end of 1934. This does not include intrastate lines, which represent an additional original investment of at least $100,000,000.

Major crude oil trunk line systems are owned by more than 50 companies. The mileage and ownership of some of the larger systems reported to the Interstate Commerce Commission as of December 31, 1941 are listed below:

Sinclair Refining Co.	6,467
Stanolind Pipe Line Co.	6,220
Gulf Refining Co.	5,954
Humble Pipe Line Co.	5,296
Magnolia Pipe Line Co.	4,132
Shell Pipe Line Corp. (Shell Oil Co., Inc.)	3,821
Texas Pipe Line Co.	3,279
Illinois Pipe Line Co.	2,677
Buckeye Pipe Line Co.	2,024
Texas-Empire Pipe Line Co.	1,507
Standard Oil Co. of Louisiana, Inc.	1,397

Lines to carry refined oil or gasoline are shorter than the crude oil trunk lines, as the following list indicates:

Great Lakes Pipe Line Co.	2,073
Phillips Pipe Line Co.	1,075
Susquehanna Pipe Line Co. (and other Sun lines)	795
Keystone Pipe Line Co.	655

Natural Gas Pipe Lines

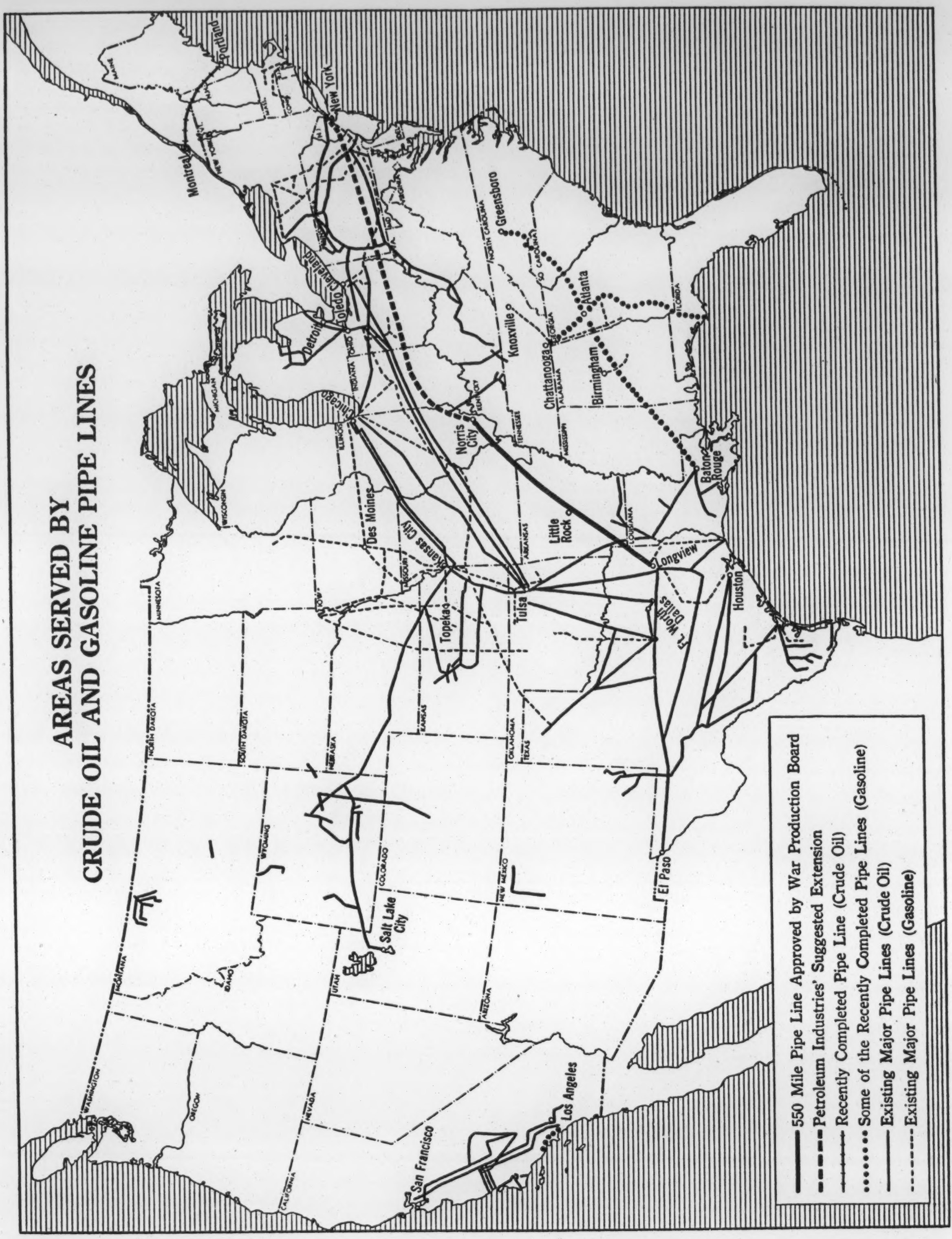
In addition to the pipe lines for the transportation of petroleum, there are in the United States almost 200,000 miles of natural gas pipe lines. At the beginning of 1940, natural gas pipe line mileage totaled 190,270, as compared with 186,850 miles in 1939 and 182,320 miles in 1938. This includes transit lines, which in 1940 aggregated 84,700 miles, as well as distribution lines. Natural gas pipe lines are located in 32 States, with Ohio, Texas, California, Pennsylvania, Kansas and Oklahoma leading in mileage of such lines.

The principal use of natural gas is as a fuel, for which the demand has been greatly increased at a time when the industry's transportation problem has been complicated by steel priorities affecting pipe line construction. Technological advancements and the use of reclaimed pipe, compressors and other material have proved valuable aids in the adjustment to changing conditions.

Pipe Line Regulation

Regarded as common carriers, the interstate pipe lines are regulated by the Interstate Commerce Commission, while those lines engaged in strictly intrastate transportation are under the supervision of state authorities. For a number of years there has been agitation for extension of the Interstate Commerce Commission's power over these transmission units. Divorcement of oil pipe lines from their affiliated companies has been frequently discussed. Among the grounds advanced for such divorcement is the claim that high pipe line rates have given the larger companies a competitive advantage by permitting them to use profits from pipe line transportation to offset losses from uneconomic marketing practices. The oil companies have contended that integrated operation is necessary for efficiency, which would be impaired by breaking up the units and extending Federal control over the industry. The companies point out that the pipe lines have been built by private capital, without land grants or other public financial aids and that they have been operated without governmental subsidies; that they have brought the crude oil market to the producer's well; that they have materially reduced costs of land transportation of petroleum; that they have rendered efficient, dependable and safe service.

Last year, the Government brought suit against twenty major oil companies, fifty-two pipe line companies and seven subsidiaries or affiliates, alleging that the pipe lines had paid refunds and rebates to the shipper-owner companies in the form of dividends which often represented exorbitant returns on the pipe line stock. In December, 1941, a consent decree was issued, limiting the shipper-owners' returns from pipe line transportation service to a maximum of 7 per cent of the I.C.C. property valuation, adjusted to date, with any earnings in excess of this amount to be transferred to a special surplus account for extending existing or constructing additional common carrier facilities, for normal and reasonable working capital re-


AREAS SERVED BY
CRUDE OIL AND GASOLINE PIPE LINES
550 Mile Pipe Line Approved by War Production Board
Petroleum Industries' Suggested Extension
Recently Completed Pipe Line (Crude Oil)
Some of the Recently Completed Pipe Lines (Gasoline)
Existing Major Pipe Lines (Crude Oil)
Existing Major Pipe Lines (Gasoline)
Portland
New York
Montreal
Cleveland
Toledo
Detroit
Chicago
Greensboro
Atlanta
Knoxville
Chattanooga
Birmingham
Norris City
Des Moines
Kansas City
Topeka
Tulsa
Little Rock
Longview
Baton Rouge
Dallas
Ft. Worth
Houston
El Paso
Salt Lake City
San Francisco
Los Angeles
MAINE
NEW YORK
MICHIGAN
WISCONSIN
ILLINOIS
INDIANA
OHIO
KENTUCKY
TENNESSEE
NORTH CAROLINA
SO. CAROLINA
GEORGIA
ALABAMA
MISSISSIPPI
FLORIDA
LOUISIANA
ARKANSAS
MISSOURI
IOWA
MINNESOTA
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
TEXAS
NEW MEXICO
COLORADO
WYOMING
MONTANA
IDAHO
UTAH
ARIZONA
NEVADA
CALIFORNIA
OREGON
WASHINGTON

quirements, and for retiring debts originally incurred for common carrier facilities.

War and the Flow of Oil

War emergencies have wrought profound changes in methods of oil transportation, particularly the supply for the Eastern Seaboard and the Pacific Northwest. In peace, tankers had been the principal means of moving oil to these areas. About 95 per cent of the oil requirements of the Eastern Seaboard had been moved by tanker from the wells in the Southwest, with eastern production accounting for only about 5 per cent of seaboard consumption, which amounted approximately to 1,500,000 barrels a day. Tanker transportation was so efficient and cost so little that in some instances pipe lines carried oil inland from coastal refineries.

Sinking of tankers by submarines along the Atlantic Coast began shortly after the outbreak of war. Other tankers were requisitioned by the government to serve with the armed forces. It soon became necessary, therefore, to substitute other methods of transportation for the peacetime tankers. In the crisis, attention centered upon the extension of pipe lines or the construction of new ones and upon the railroad tank car.

Because steel is required for the building of pipe lines, the question of priorities arose in this approach to the problem. Eleven oil companies in 1941 offered to pool resources and put up the $80,000,000 required to build almost 1,600 miles of twenty-four-inch line across eight states from East Texas to New York, thus replacing 50 tankers. The Priorities Board refused to allocate the steel, as it would build nearly 200 tankers.

The oil industry and the railroads meanwhile had jointly undertaken a program designed to increase the movement of oil to the Eastern Seaboard by railroad tank car, a method not extensively employed previously because of the heavier transportation costs involved. A year ago, very few tank cars were moving oil into the East. To accommodate the public in the emergency, the railroads made a drastic reduction in oil rates and are now transporting more than 800,000 barrels a day into the seaboard area, more than half the requirements of this region. This achievement by the railroads and the oil industry has been termed "outstandingly excellent" by Petroleum Coordinator Ickes, who has been supervising the efforts to solve the oil transportation problem. Similarly, railroad tank cars are moving oil into the Pacific Northwest to replace, at least in large part, the supply formerly carried by tankers.

Recent Pipe Line Developments

Even the remarkable increase in oil transportation by railroads does not fully meet the demands of either the Eastern Seaboard or the Pacific Northwest. In June the War Production Board approved construction of a 550-mile, twenty-four-inch steel pipe line from Longview, Texas, to the Southern Illinois area. This project is to be federally built and operated.

According to a report made to the Petroleum Industry War Council by the Committee on Petroleum Economics, only about one-third of this pipe line's capacity of 300,000 barrels a day "will represent a net gain to the East." The Committee says that "since the line goes only about 40 per cent of the way, and most of the oil must be transported the rest of the way by tank cars, tank cars are still the bottleneck, and the net gain is that due to the shorter haul from Southern Illinois instead of from Texas. In addition, part of the oil will merely offset the probable decline in Illinois production, which already has a relatively short haul to the East." However, this supply, together with that already being moved by rail, will meet almost two-thirds of the area's requirements. While the problem is not completely solved, it is apparent that much headway has been made.

During the first half of 1942, almost 2,400 miles of oil pipe lines were reported constructed or contracted for, in spite of the difficulties in getting needed materials. Last year, according to reports, more than 8,000 miles of trunk line, loops and laterals were added to the nation's crude oil, gasoline and natural gas systems. This compares with 6,000 miles in 1940, 5,000 miles in 1939, and 2,500 miles in 1938.

Much old pipe has been torn up and relaid, and considerable secondhand equipment has been pressed into service. Other developments in recent months include the greater use of centrifugal pumps, the increase in pressures employed on lines and similar innovations to keep pace with changing requirements.

The reversal of flow in a number of lines is a most important adjustment. For example, it is planned again to reverse the line from Bayonne, New Jersey, to eastern Ohio, originally carrying crude oil to the refinery and later changed to deliver products to the west. Under the new plans, it will again carry crude oil to the East. To achieve this will necessitate moving pumping stations from one side of the Alleghany Mountains to the other. In some instances, such as in the 300-mile line across the mountains from Philadelphia to Pittsburgh, such transfer of pumping stations has already been completed.

Summary

In general, the war period, so far, has served to demonstrate convincingly the value of pipe lines to the national welfare, so that continued expansion of both their facilities and their scope of usefulness seems to be assured.

One of the most important lines ever projected is that planned to carry oil from East Texas to a main northern terminal in Illinois. To meet more fully the emergency requirements of the Atlantic Seaboard, it would be necessary to extend this line to the New York City and Philadelphia refining centers, although this would require approximately 1,000 additional miles of pipe.

For the long term, it seems likely that after the war when tankers return to service from the Gulf ports to the East Coast region, they may regain much of the oil traffic now being moved by pipe lines and railroad tank cars unless some way is found to meet the low cost of tanker transportation. Considerations of national safety and welfare during war emergencies such as this, however, may bring alterations in the normal oil transportation system so that in time of crisis alternative methods of moving oil to all areas may be readily available.

Commodity Prices

LONG TERM TRENDS

	1942					JULY							1939 Year Average	Low Since 1920	Peak Since 1914
	July	June	May	April	Mar.	1941	1940	1939	1938	1937	1936	1913			
COFFEE (New York—Cents per lb.)*															
Santos No. 4	13.38	13.38	13.38	13.38	13.38	12.46	7.13	7.25	7.50	11.50	9.38	11.75	7.42	Aug. '40 6.63	Nov. '24 29.00
COPPER (New York—Cents per lb.)															
Electrolytic	11.87	11.87	11.87	11.87	11.87	11.87	10.69	10.09	9.68	13.87	9.47	14.57	11.07	Dec. '32 4.75	Mar. '17 35.74
COTTON (New York—Cents per lb.)†															
Middling 1 1/16″	20.27	19.78	20.88	21.10	20.42	16.55	10.42	9.71	8.85	12.26	13.11	12.26	9.46	June '32 5.00	May '20 43.75
HIDES & SKINS (Chicago—Cents per lb.)															
Native Steers Heavy	15.50	15.50	15.50	15.50	15.50	15.00	11.38	11.50	11.10	18.00	12.25	17.75	12.30	Apr. '32 4.25	July '19 53.50
Calf Skins	21.75	21.75	21.75	21.75	21.75	21.75	18.91	15.81	13.82	20.88	16.96	19.50	17.91	May '32 4.50	Aug. '19 100.00
PETROLEUM (Dollars per barrel at well)															
Pennsylvania, Bradford	3.00	3.00	3.00	3.00	3.00	2.75	2.09	2.00	1.80	2.82	2.45	2.50	2.06	May '33 1.27	Mar. '20 6.10
Mid-Continent	1.17	1.17	1.17	1.17	1.17	1.17	1.02	1.02	1.22	1.22	1.10	.92	1.02	July '31 .18	3.50
PIG IRON (Dollars per gross ton)															
Iron Age Composite Price	23.61	23.61	23.61	23.61	23.61	23.61	22.61	20.61	19.61	23.25	18.84	13.99	21.19	Dec. '32 13.56	July '17 52.11
RUBBER (New York—Cents per lb.)															
Ribbed Smoked Sheet	22.50	22.50	22.50	22.50	22.50	22.36	21.17	16.55	15.45	18.87	16.47	70.50	17.66	June '32 2.63	July '25 123.00
SILK (New York—Dollars per lb.)															
Crack XX 13-15 White 78%	(1)	(1)	(1)	(1)	(1)	3.16	2.55	2.66	1.83	1.97	1.71	......	2.73	Aug. '34 1.11	May '23 9.80††
SUGAR (New York—Cents per lb.)															
RAW Centrifugal 96°	3.45	3.45	3.45	3.74	3.74	3.51	2.68	2.90	2.79	3.48	3.70	3.55	2.82	May '32 2.57	May '20 23.57
TIN (New York—Cents per lb.)															
Straits	52.00	52.00	52.00	52.00	52.00	53.35	51.59	48.52	43.37	59.31	42.97	40.39	50.20	Apr. '32 18.35	May '18 110.00
WHEAT (Minneapolis—Dollars per bu.)															
No. 1, Northern Spring**	1.10	1.10	1.15	1.14	1.19	.99	.78	.74	.90	1.50	1.36	.90	.81	Dec. '32 .43	May '20 3.23
WOOL (Boston—Cents per lb.)															
Ohio ¼ Blood	49.6	50.2	51.5	51.5	51.5	46.5	38.9	31.8	28.7	42.5	38.5	23.5	36.0	May '32 13.5	Mar. '18 80.0
Territory Fine Staple (Scoured Basis)	119.5	119.5	119.5	119.5	117.5	107.3	86.4	71.4	68.7	99.7	89.0	54.0	82.3	July '32 36.0	Mar. '20 210.0
U. S. Bureau of Labor Statistics Wholesale Commodity Index, Av., 1926 = 100	p98.7	p98.6	98.8	98.8	97.6	88.8	77.7	75.4	78.8	87.9	80.5	69.5	77.1	Feb. '33 59.8	May '20 167.2
National Industrial Conference Board Cost of Living Index, Av., 1923 = 100	97.5	97.3	97.3	97.1	96.1	88.9	85.7	84.2	85.7	88.2	84.2	......	84.5	Apr. '33 71.7	June '20 123.1
FEDERAL RESERVE BOARD Industrial Production Index*** Av., 1935-39 = 100	p181	177	175	171	168	159	120	102	84	118	103	......	108	July '32 52	July '42 p181

NOTE: Commencing with the Summer, 1941, issue of The Index, monthly average prices are recorded. Certain changes in the list of commodities have been made to expand coverage of items in international trade. Every effort has been made to secure quotations most representative of the leading markets in each commodity, but their accuracy cannot be guaranteed.

(1) Data not available.

*From Pan American Coffee Bureau beginning with year 1940.

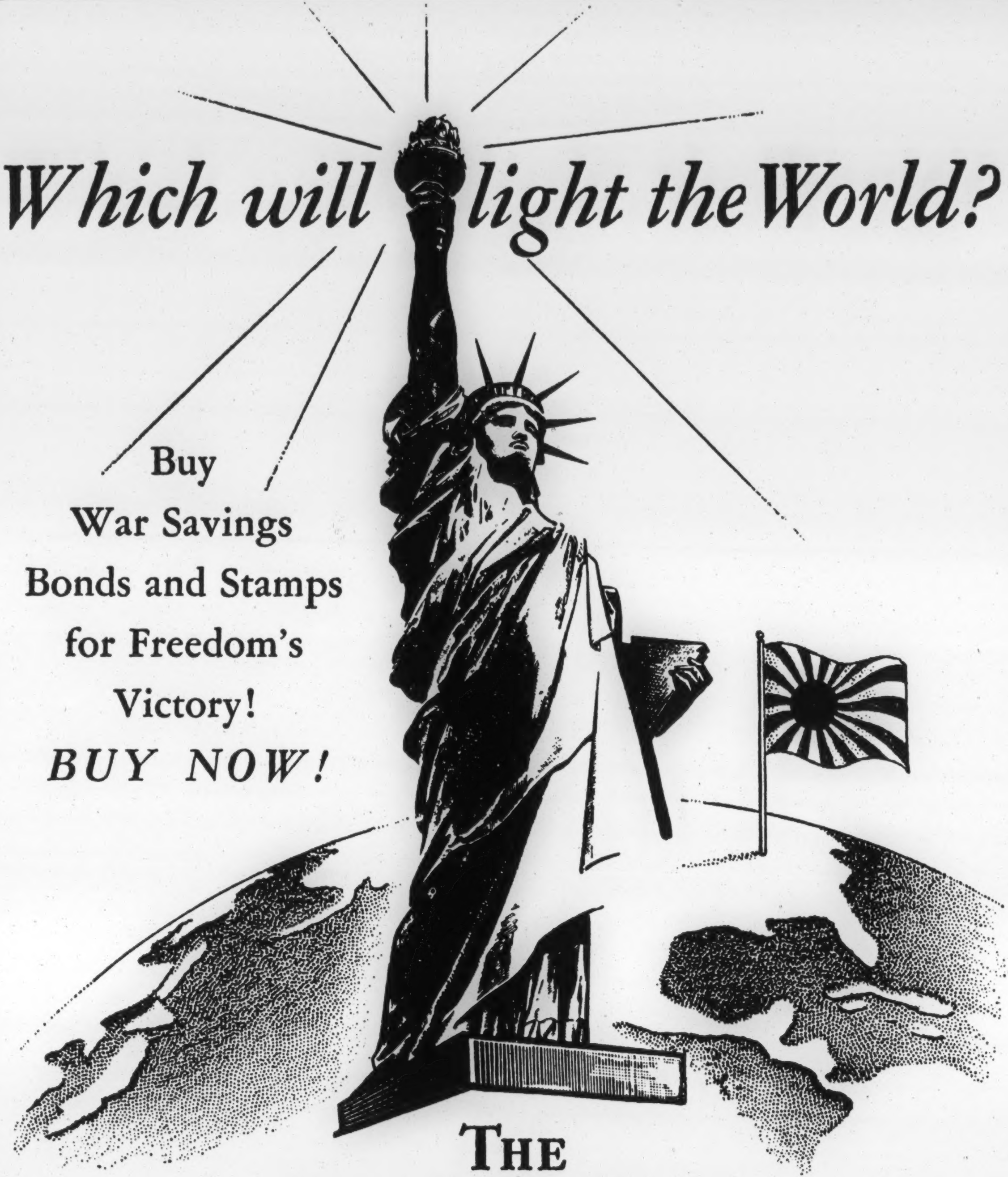
**Quotations for comparable grade following July, 1935.

***Without seasonal adjustment. Average per working day.

†Quotations prior to 1941, Middling ⅞″.

††Since 1920.

p—Preliminary



Which will light the World?

Buy
War Savings
Bonds and Stamps
for Freedom's
Victory!
BUY NOW!

**THE
NEW YORK TRUST
COMPANY**

100 BROADWAY
MADISON AVENUE AND 40TH STREET
TEN ROCKEFELLER PLAZA

U. S. DEPARTMENT OF LABOR
WOMEN'S BUREAU
Washington

WOMEN IN WAR PRODUCTION

A TALK BY MARY ANDERSON, DIRECTOR, WOMEN'S BUREAU, U.S. DEPARTMENT OF LABOR, BEFORE THE NEW YORK CHAPTER OF THE SOCIETY FOR THE ADVANCEMENT OF MANAGEMENT, BUILDER'S CLUB, 2 PARK AVENUE, NEW YORK CITY, OCTOBER 15, 8 P.M., 1942.

In talking to you this evening about women in war production, I feel as though I were carrying coals to Newcastle. Many of you could give me much helpful information on the subject. In fact you have. In our Women's Bureau investigations we are dependent largely on the cooperation of management in the gathering of our facts.

Then we do a processing job by running through our statistical mill the data compiled from many sources. As a result I am able to present to you samples of information on the occupations and industries in which women are now found - on their problems and conditions in war plants - on policies and practices leading to their efficient employment.

We have had a steady stream of requests for assistance from industrialists planning to hire women for the first time. Almost overnight after we got into war, managements reclassified women from a marginal to a basic labor supply for munitions making.

The aircraft industry is a striking illustration of the collapse of barriers to women workers - almost like the fall of the walls of Jericho. A Women's Bureau survey of the industry in the spring of 1941 showed a bare sprinkling of women on productive work, mainly in the fabric department. Women were not wanted. Nevertheless, we analysed the occupations in the industry to show where women could be used, if needed. A year ago there were still only about 2,000 women in the aircraft factories - now there are 63,000 or more in the aircraft assembly, engine, and propeller plants. Our recent survey of the industry showed women engaged on a great variety of jobs.

The forecast for women's total war employment is that the present number of over 2½ million so engaged will be swollen by several additional millions before the war is over.

Every employer confronted with the need to use woman labor wonders: What kinds of work can women do best? In a general way I want to reply to this question by listing various types of occupations we have found women doing in many plants in the key war industries. These operations must, of course, be tailored to the peculiar needs of each plant.

Though men are still the masters in the durable goods industries, women are found to be better at some jobs -- those requiring patience, painstaking, finger sensitivity, and dexterity. Women can work to precise tolerances as fine as ten-thousandths of an inch.

First, List A, includes the following simpler processes on which women are used extensively after a short in-plant training period: Hand finishing of machined parts by filing, burring, lapping; electrical work such as wiring, winding coils and armatures; light assembly work of all types (sub and final); soldering; inspection visually or with gages, calipers (sometimes with blue print reading), etc.; operation of machines, such as drill presses (single and multiple spindle), light punch and forming presses, burring and polishing machines, etc.

The B list of operations on which women are proving quite satisfactory to a growing extent comprises: Operation of light turret lathes; hand-screw machines; profilers, nibblers, shapers; machines for gear shaping, cutting, hobbing, for optical glass grinding and polishing; and so on. Other types of work in this list are: Sheet metal forming; riveting; welding (that is acetylene, torch and spot welding); spray painting; calibrating; checking and testing raw materials and stock; packing, labeling, etc; as factory clerks and tool crib and stockroom attendants and dispatchers.

The last or C list consists of occupations still largely masculine but into which fields a few women have pioneered successfully, such as: Setting up machines; operating cranes and heavy duty machines, such as those for nailing and woodworking, and the automatic-screw. This list includes also drafting; hand gluing of plywood, electric arc welding; production planning; supervisory work, job instructor, and so on. In fact, experience proves that women can do practically any type of work except that requiring heavy lifting.

Managements have expressed not only satisfaction but amazement at the speed and facility with which women have adjusted themselves to a man's work world. A number of employers seem ready now to adopt the English slogan: "Nothing that a woman can do or learn to do should be allowed to absorb a man of Military age."

Let us take a quick bird's eye view of some of the industrial fields that have opened up to women. The most spectacular development to date is their increasing vital role in the making of airplanes, as I have already pointed out. Manufacture of electrical machinery and equipment employs more women than any other key war industry, but even in peacetime this field engages large numbers of women.

The manufacture of ammunition for both fire arms and artillery, because of the very simple operations readily done by women after several weeks' training at most, took on thousands of women even during the defense period and is still expanding its woman force. Our recently completed report on artillery ammunition reveals that officials in 10 of the plants visited predicted that two-thirds or more of their labor force will be women. It was said that women could be used on loading shells as big as 105 mm. or bigger. In ammunition for fire-arms and for machine guns the proportion of women might be even larger in view of the small products.

The war instrument industry -- the making of aircraft, fire-control, surgical, and dental equipment -- is another field where women are definitely gaining ground despite considerable opposition to them in some instrument plants prior to the war. Women seem particularly well fitted for the work on instruments, as they are relatively small and light and made up of intricate parts.

In the manufacture of fire arms and guns, though almost no women were so employed in this country a year ago, the feminine force is now growing conspicuously. Our recent investigation showed woman labor to constitute as much as two-fifths of the total force in an occasional plant. In general, women in this field are used on more different types of machines than in any other industry. Much "worrying of the metal" -- the trade term for machining parts, -- is necessary and women are particularly good at this.

Even in the heretofore, strictly masculine machine-tool industry women began last summer to gain their first foothold since World War I. Only to a limited extent are women engaged in the manufacture of parts for machine tools proper, but most of the firms we visited in a just completed study had plans for putting women on this work. Already women in a number of the plants were on operations for making side-line products, such as machine-tool attachments like cutters and broaches, also such products as gages, calipers, and micrometers. (Brown and Sharpe in Rhode Island, and the La Pointe Machine Tool Company in Massachusetts, may be cited as using women for these types of work. At the Bullard Co. of Bridgeport, making big vertical lathes, women have been operating cranes ever since the last war.) English women are even now employed on heavy jobs in machine-tool manufacture.

(Some women are now employed in foundries doing core-making -- for example, for the Jones and Lamson Machine Tool Company in Springfield, Vermont, and in foundries in the Cleveland area.)

Even the steel industry, faced with a shortage of men, anticipates much more extensive use of women -- for such machine work as nail and wire drawing, operating of cranes and other lifting apparatus, also for driving in-plant industrial tractors. (The Carnegie-Illinois Steel Corporation, for example,) talks of hiring 4,000 women on new jobs and also to take the place of men inducted into the armed forces.

Shipbuilding is much discussed in newspapers just now as a field opening up to women. Last month I had a chance to see women -- some hundreds of them -- working in a Kaiser shipyard near San Francisco. There, as well as in the Portland Yard, women are being used in certain kinds of work that they have been doing now for some months in the Navy Yards on both the East and West Coast.

Look at the Brooklyn Navy Yard employing women for the first time in its 141 years of existence. Women are making good there as welders, electricians' helpers, shipfitters' and loftsmen's helpers. Women are also at work in the machine, paint and optical shops, and as tool-room attendants.

The Brooklyn Navy Yard, which expects to have 600 women by the end of the year, is helping to point the way to the private yards in this area, which anticipate taking on 40,000 more workers by the end of December, many of whom may well be women. Mrs. Elinore Herrick as the newly appointed personnel director of the Todd Shipyards Corporation has already started to hire women.

Such employment opportunities are eagerly seized by workers in New York City, which unfortunately does not reflect the national picture of steadily expanding employment due to war industries. It is a paradox disturbing to industry, labor, and government that there is so much local unemployment -- 400,000 persons including some 160,000 women are jobless -- while on the very fringes of the Metropolitan Area -- notably in Connecticut, - there is a serious labor shortage.

New York City's unemployed women, may hope for some other work opportunities -- in local plants producing electrical equipment and war instruments. Last June such factories reported an anticipated need of about 3,200 women. Also, Long Island war industries, especially the aircraft and instrument factories, report the need of 10,000 women by February 1943. This will mean recruitment and training of New York City women as well as those in the community. Improved transportation also is required to meet the expansion.

Connecticut and New Jersey have taken up some of the New York City slack of jobless workers, but a housing shortage and other problems in Connecticut block further migration of labor. Connecticut with its many industrial centers can boast of such diversified war industries as - aircraft, fire-arms, guns, ammunition, machine tools, brass and copper, rubber, and so on. Many plants in the area have definite need of additional women.

New Jersey is also thick with woman-employing industries. We have just completed an intensive study of women in war production in that area. A cross section -- furnished by the New Jersey plants we visited -- reveals the following statistics for the various industries:

Aircraft engine and propellors - women forming little less than a tenth of the force.
Ammunition, gun parts, and ordnance accessories -- over a fourth of the workers, women.
Apparel -- almost 70 percent of the force, women.
Chemicals and drugs -- 14 percent, women.
Instruments -- over a third, women.
Machines and machihe tools -- 17.5 percent, women.
Plastic product -- a fourth, women.
Rubber products -- almost 17 percent, women.

The difference between New Jersey and New York City clothing factories in regar to war orders is striking. Of 27 New Jersey apparel plants that we visited, 25 were on a 75 percent or higher war production basis, while the New York City clothing industry -- the largest woman-employing type of manufacture here -- has been used only partially for war purposes.

In fact, many of the local factories fall into the small business class and have so far been unable to secure war orders. Most of the 35,000 factories in this city employ 19 persons or fewer. These firms should have a more vital part in the war effort, if Government activities or Yankee ingenuity can bring this about. Hedley Williams of Britain's Ministry of Production, on a recent visit to Washington declared, "If it had not been for small factories, we would have lost long ago." He added thatone of our troubles has been too much reliance on big business.

Local metal plants -- another important branch of manufacture in the Metropolitan area -- might follow the example of a Brooklyn firm that has secured 100 war orders by converting from springs and metal specialties to such varied war materials as goggle frames, rifle tripods, gun and airplane parts.

Suggestive to local factories is the following list of illustrations of conversion of plants in various parts of the country -- from lingerie to camouflage netting; lip-stick cases to bomb fuzes; baby carriages to field hospital food carts; outboard motors to gun carriages; business machines to shells; hair clipping machines to projectiles; silk ribbons and silk goods to parachutes; toy trains to parachute flare casings; beer cans to hand grenades; fishing reels to percussion primers.

PART II.

Coming now to the second half of my discussion I must admit that women's greatly increased employment in war production is not without its problems. To help in the solution of these I've sought to draw up a blue print of specifications.

The first set of suggestions relates to recruitment and selection of women employees. For assistance in securing workers a plant should turn to the local offices of the U. S. Employment Service. Expert facilities offered there include aptitude and personality tests, which many firms having no such provisions of their own, may find helpful in the selection of applicants. In our aircraft survey we encountered some difference of opinion as to the value of these tests. But physical examinations of women applicants for war industry jobs is advisable and usual these days.

Competent women to interview woman applicants are better able to evaluate them and to eliminate at the hiring desk the misfits and likely trouble makers. But there should not be discrimination against women because of race, creed, color, or national origin. Such practices are forbidden by the President's executive order of June 1941.

As a result of this order Negro women are slowly but surely finding their way into war production and making a satisfactory record on machine jobs, assembly and inspection work -- notably in arsenals and aircraft factories. Our New Jersey survey showed at least a few Negro women on productive work in some of the plants visited. The Zipper Bag Company of New York City, converted to gas masks production, was reported to have 70 Negro women as sewing-machine operators last March.

Another group for whom I wish to make a plea are the women in their forties or fifties seeking employment. Many plants have the unfair practice of "thumbs down" on all women over 35. Older women employed in many of the plants we visit are doing a fine job. They have definite assets, such as mature judgment, stability, and often years of excellent experience. If women have been out of employment for some time they may need a refresher course to fit them for present day jobs. You can find many illustrations of women of 47, 48, or older who after the necessary training are proving very useful on production lines.

The Manpower Commission urges that communities with labor shortages utilize all possible types of labor before recruiting from other areas. But one group that should not be recruited until absolutely needed is the mothers of young children. They can be much more helpful to the Nation by staying at home, caring for their family. But since some women of this type must earn a livelihood and some are already employed in war plants the Manpower Commission has issued a directive to the Defense Health and Welfare Services to coordinate, integrate, and develop programs for the day care of children. Several Federal agencies, such as the Children's Bureau and the W.P.A., are already carrying on in this field.

The training of women, being both a pre-employment as well as an in-plant problem, next claims our attention. One of the chief training programs now generally open to women since our entrance into the war -- though not to any real extent during the defense period -- is labeled the Vocational Training for War production Workers. As you doubtless know it is financed by the Federal Government, administered by the U. S. Office of Education, and conducted by the State Vocational Education boards. In every community the local offices of the U. S. Employment Service help to shape the courses and refer women to them -- in accordance with local needs. The curriculum includes pre-employment and refresher courses, also supplementary courses for women already employed but wanting to acquire higher skills. Almost 200,000 women have been so trained since this program started two years ago. Over 53,000 women were enrolled in courses at the end of last July. By this method women are being trained in various kinds of machine operations; welding; sheet metal, assembly, or inspection work. Women may also take courses in blue-print reading and use of measuring tools, and courses giving some knowledge of metals, and so on.

Pre-employment training gives women an industrial background and sometimes a preference in the matter of employment. After they get jobs it may enable them to advance more rapidly.

Some employers are not enthusiastic over such preliminary preparation of applicants, as many managements prefer to train workers entirely in the plant. It is said that for almost nine-tenths of the industrial jobs, in-plant training is necessary. An orientation course on the job, and plant procedures for new women workers is customary in most plants. The Remington Arms Company, of Bridgeport, furnishes an illustration of an in-plant training school with a regular staff of teachers, who were former employees. There is an orientation series of lectures on industrial relations, plant regulations, safety in general and for the specific job.

Most companies have too few supervisors and facilities for specialized instruction. Therefore the Training-Within-Industry program, known as TWI, under general sponsorship of Channing Dooley, now in the Manpower Commission, is proving of great assistance to industry. Experts lent by industry to Government furnish to individual plants -- up-to-date advisory service on advanced methods of procedures for up-grading and job instruction. Hundreds of factories all over the country have been using this service and in a number, women workers along with men have derived its benefits, Mr. Conover, assistant director of TWI says, "There are no special training problems presented by women, no changes made in any of the training programs we set up when women come into the classes. But the TWI representative calls attention to special occupational hazards for women." Western Electric, Westinghouse, Bendix, and Kingsbury (Indiana)

Ordnance companies are a few outstanding firms where job instruction classes have included women.

You are doubtless familiar with the Government financed courses on the college level, designated as the Engineering, Science and Management War Training program. Some 13,000 women are now in these courses, which train women as engineering aides, in drafting and laboratory work, and for supervisory jobs, etc. College students, also high school graduates, with better than average preparation in mathematics and physical sciences may get the benefit of this free training. But women hoping to do supervisory work should also have as a foundation some past experience in production work.

A Dexter Hinckley, the Columbia University director of this type of training, recently declared that of 130 women enrolled at Columbia this year, 100 have completed their training and so far 75 of these have obtained employment. The others are in the process of being hired.

Certain plant adjustments are necessary when women are introduced into the enterprise for the first time or when their employment is extended to so-called masculine jobs. In advance the men employees should be informed of the innovation -- also the union officials in an organized shop. It is not likely that any management would bring women into a concern as a grand surprise, but the way can be smoothed by the personnel division's tactfully seeking the cooperation of the men. When they find that women are not to be a wage-cutting factor, men soon accept them without further protest.

Physical changes in the plant set-up are not always so extensive. A preliminary survey of occupations may show the value of some breakdown in jobs, some changes in machines. Women who are generally shorter than men may need a platform on which to stand or certain other minor adjustments for the sake of comfort and efficiency. In an aircraft plant, for example, steel jigs xxx too heavy for women to lift were replaced by masonite jigs weighing less than a tenth as much. Engineers in a machine tool company put a new lever on a special spinning lathe so that a woman could operate it with 70 percent less effort than was required before. The Republic Drill and Tool Company of Chicago redesigned the machines for its new women employees. One machine formerly had a hand lever that took a man's strength to move; now it has a two-foot extension lever that a woman can operate with two fingers. Why wasn't this labor saving device put on some years ago to increase men's productivity, we wonder. This is a key question frequently asked these days when the tailoring of jobs for women often results in greater plant efficiency.

The entrance of women into an establishment calls for additional service equipment -- lavatories, rest rooms, dressing room, at least, and possibly some increased eating and first-aid facilities.

Segregation of women in certain departments is unnecessary and undesirable. In the long run it will retard production if women's activities are limited to only those departments devoid of men. Women learn a lot about industry from association with experienced men who know the plant set-up from A to Z.

Employment of women in new or unusual jobs requires continuous supervision. This causes unique problems to a number of firms, though personnel managers sometimes tell us the methods of handling women are no different than for men. But a frank foreman hit the nail on the head, when he said, "Theoretically we treat women just the same as men. I give the same order to a man or a woman -- but there's a different tone in my voice." He realized that women can be led rather than driven. Also men as supervisors must be tactful and not play favorites.

We can cite good arguments both for and against women supervisors. A competent woman understands women and their problems much better, but good women supervisors are difficult to find for war production, since not enough women have a real knowledge of such industries. The Remington Arms Company with women forming about half of its 15,000 employees deserves honorable mention for its successful use of women in supervisory capacity. A well-qualified young woman as the assistant personnel director has a thorough knowledge of the plant. She has educated herself by actual production work in all departments. She now selects women for jobs, plans the conversion of men's jobs to women, advises on training, selects and trains women as group leaders, each in charge of 25 women.

In a number of companies we have found similar success in the employment of women as group leaders or counsellors -- a sort of buffer between the foreman and rank and file of women workers, helping to solve their personal problems. Some plants are hiring college women for production lines, with the idea of later promoting them to be supervisors or instructors. Teachers are often selected for this purpose.

Next, we come to what I might call the keystone in women's employment -- the question of fair wages. Wages should be based on occupation, not on sex. This policy the Women's Bureau has always stressed since its origin in World War I to promote the effective use of women in industry in that emergency. A double wage standard -- one set of rates for men and a lower set for women -- is outmoded and should be ruled out everywhere and forever. At the present time under--payment of women who take the place of men called to military duty or more skilled work undermines the morale of the women on the jobs and the men who expect to return to them and fear pay-cutting of women as a menace of their wage standards.

Much progress has been made in regard to the same pay standard during recent months. The aircraft industry deserves special credit. Most of the plants have set 60 cents as the minimum entrance rate for both men and women. You know that the president of the National Association of Manufacturers not long ago came out in favor of the same pay policy.

Many existing union agreements -- both A. F. of L. and C. I. O. -- with firms employing woman labor contain clauses requiring that women be paid the same rates as men. The contract between the Westinghouse Electrical Company and the United Electrical, Radio, and Machine Workers of America, might well be cited since it covers all the firm's 33 plants.

A significant step in the direction of the same pay policy has been taken by the Government, with the National War Labor Board's adoption of such a measure in three of its recent decisions -- in the Norma Hoffman, General Motors, and Brown and Sharpe cases.

I wish to warn against a possible loophole in this effort. An employer in replacing men with women may argue that this causes increase in labor costs if he has to have a move-man to do the heavy lifting for women. On the contrary, labor costs per unit may be less when men or women as machine operators devote themselves 100 percent to their skilled work, with unskilled labor to handle the moving and lifting. Such methods have been definitely used at times to increase efficiency and to reduce cost per unit of product in some plants employing only men.

As to optimum hours for women, about which we are often asked, we advocate 8 a day and 48 a week for steady work under pressure. Experience and scientific study have proved the case for such a schedule. Recently 8 Government agencies recommended it to all war contractors, for both men and women. These agencies further declared that the individual should have one day of rest in approximately 7, and a 30-minute meal period in the work shift. For women we urge also a 10-minute rest period in each half of the work shift, to prevent undue fatigue and to increase a woman's efficiency.

We realize that in the present emergency, war contractors may at times need to employ women more than 48 hours a week or on night shifts in States with laws generally prohibiting such practices. In some States the law includes such an emergency clause. Other States have passed a temporary act or taken other action permitting some leeway during the war crisis but safeguarding the regular legal standards.

Through such measures State departments of labor or other official authority may grant relaxation of the law in individual plants for a limited period for women on war work if investigation proves the employer's need.

Of 21 States and the District of Columbia with a maximum workweek of 48 hours or less for women in manufacturing, 17 have granted such temporary relaxation of the legal standard. Among these States are New York and Connecticut. New Jersey, with a 54-hour maximum for women, has granted no exemption. All three of these States are among the 11 States with laws or orders prohibiting women on night work, and all three now allow women to be employed on night shifts in this crisis.

Though we realize the need for this we still feel that night work is undesirable for women and urge management to take all possible precautions in regard to adequate transportation, food, lighting, etc., to lessen the strain of women on the swing and graveyard shifts.

We have given some study to the rotation of shifts. We believe women's cycle of living habits is less seriously upset if the workers are not changed from one shift to another more often than every 2 or 3 months.

In regard to many other aspects of health and safety, old problems take on new importance, now that women are being employed so much more extensively in new industries.

A primary requirement for women is proper seating. Posture chairs adjusted to the work and the worker lessen fatigue and increase efficiency. They may permit a woman in many instances to sit or stand at her work. Constant sitting as well as constant standing is a cause of fatigue. In our recent investigations we have found women sitting all day on uncomfortable chairs or even stools -- a bad situation easily remedied.

The question of work clothing is particularly important, with so many women now doing men's jobs. Women must make more radical changes than men in their work garb, especially when employed at or near machines. Then slacks or coveralls are needed for safety, and hair should be covered by comfortable caps or scarfs. Low-heeled sensible shoes with closed boxed toes should be required -- cut-out toes, bedroom slippers, flowing sleeves, full skirts, jewelry are taboo.

Uniforms may sometimes be desirable and if there is a good reason for them they will be accepted readily by women, but it is easier to lead than to regiment women into uniforms. The Sperry Gyroscope Company handled the uniform situation tactfully, by allowing the women to help plan and select their uniforms with the aid of a woman executive and designer. The Company furnishes the uniforms, the women are responsible for the laundrying.

In general women's work clothing should be safe, comfortable, durable, washable, but may also be attractive, with some outstanding designers now giving this matter attention.

A report on safety clothing is one of a series on working conditions for women in war plants that the Women's Bureau has issued. Other reports deal with weight lifting, toilets and washrooms, industrial hazards, maternity care, and other subjects.

The question may be asked: Why consider the health and safety of women apart from men? Here are some of the basic reasons:

1. Women are more susceptible to fatigue than men. Margaret Bondfield, a former British Minister of Labor, recently stated that in England it was found that women's efficiency began to slip when they worked beyond 43-1/2 hours a week.

2. Women's illness rates appear to be higher. The Boston Edison Company in a study over a 5-year period found that men lost on an average of 6.4 days a year from sickness as compared with 9.9 days for women.

It is fully proved that women are more susceptible to certain industrial poisons, lead being the best known. Then the reaction of women to even slight benzol exposure may be extremely severe and different from men's. Dr. Alice Hamilton says that women seem to be particularly susceptible to poisons attacking the nervous system, to carbon disulphide, for example. There is a belief in some quarters that women are prone to oil dermatitis. Altogether, with many more women on new processes and handling new substances, there is greater need for safeguards.

As pregnancy may aggravate industrial poisoning women as expectant mothers should be watched more carefully and not exposed to possible hazards. Women should have at least 6 weeks away from a job before the birth of a child and 2 months afterward.

The question of food service and types of food that workers eat are very important for their health and efficiency. But in many war plants we have found not only inadequate facilities, but too scant time for lunch -- 15 minutes or less. Some of the establishments are so vast and women so far from the cafeteria that they are forced to eat in the work rooms. To serve such employees a number of managements have installed lunch wagons, some of them practically rolling steam tables or ovens that can be plugged into any electrical switch. Thus are made available not only cold drinks, sandwiches and desserts, but hot soup and drinks and plate lunches. One plant offered a choice of two lunches at 21 and 26 cents, including a meat, vegetables, dessert, milk or hot drink.

I might discuss other items, such as the living conditions of women workers in congested areas -- the growing interest of women in trade unions -- the value of women as representatives on labor-management committees. These are also important factors in the satisfactory adjustment of women to war production -- in efforts to build up their morale and efficiency to the highest levels, to prevent avoidable absenteeism and labor turnover, to guarantee a steady and essential flow in output of war materials.

But I want to give you ample opportunity to discuss your particular problems, and for me to offer any other suggestions you may request. You and I realize that we are dealing not with theories about women, but with practical down-to-earth performances. Women have proved they can enact vital roles as unknown soldiers on the labor fronts. We must see to it that their energies are not wasted by wrong conditions. Women's abilities must be used most efficiently just as those of the armed forces. Only through the best coordinated efforts on both the industrial and the battle fronts can we win the war.

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For release Sunday
December 13, 1942 U. S. DEPARTMENT OF LABOR

7R-21

Estimated Number of Women Wage Earners Employed in Manufacturing Industries, October 1942 1/

The number of women factory wage earners increased by more than a half million during the first year of war, Secretary of Labor Frances Perkins reported today.

"In mid-October there were about 3,200,000 women employed as factory wage earners as compared with 2,700,000 in October, 1941," she said. "Over the same period total factory wage earners increased from 11,400,000 to an all-time high of 12,700,000.2/

"Although well over nine-tenths of the increase in factory wage employment was in the durable goods industries, which traditionally employ relatively few women, female employment increased by 20 percent as compared with an increase of 9 percent for men.

"The durable goods industries, primarily devoted to war production, absorbed about four-fifths of the year's increase in female factory employment. The transportation equipment group led with a gain of 175,000 women--almost entirely due to increased hiring in aircraft plants. Before Pearl Harbor only about 1 in 100 wage earners was a woman; today 1 in 10 is. Large increases in female wage employment were also reported by the machinery industries (106,000) and by plants manufacturing iron and steel and their products (76,000).

"In the nondurable goods industries, the number of women employed increased by 110,000--largely in ammunition and explosive plants--while the number of men decreased by 34,000. To some extent, this reflects the hiring of women to replace men who have shifted to the higher-paid heavy war industries or entered the armed forces.

"As in earlier years, establishments engaged in the manufacturing of apparel and other finished fabrics continued to employ the largest proportion of female wage earners, 78 percent. Other industries in which large proportions of the wage earners were women were tobacco manufactures, 67 percent; textile-mill products, 47 percent; and leather and leather products, 44 percent." (See attached table.)

1/ Excludes office and other clerical employees, salesmen, officials, technical and supervisory personnel.

2/ Excludes Government operated establishments such as Navy Yards, Arsenals, etc.

(LS 42-3623)

Estimated Employment of Factory Wage Earners, by Major Industry Group 1/ and by Sex, October 1941 and October 1942 2/

Major Industry Group	October 1941				October 1942				Percentage Change in Employment in October 1941 and October 1942		
	Total	Men	Women	Percent Women	Total	Men	Women	Percent Women	Total	Men	Women
	(Thousands)				(Thousands)						
All Manufacturing Industries	11,388	8,712	2,676	23.5	12,686	9,479	3,207	25.3	+ 11.4	+ 8.8	+ 19.8
Durable Goods Industries	5,898	5,398	500	8.5	7,120	6,199	921	12.9	+ 20.7	+ 14.8	+ 84.2
Iron and steel and their products	1,508	1,401	107	7.1	1,626	1,443	183	11.2	+ 7.8	+ 3.0	+ 71.0
Electrical machinery	482	337	145	30.1	592	393	199	33.7	+ 22.8	+ 16.6	+ 37.2
Machinery (except electrical)	918	867	51	5.6	1,115	1,012	103	9.3	+ 21.5	+ 16.7	+102.0
Transportation equipment (except automobiles)	739	731	8	1.1	1,744	1,561	183	10.5	+136.0	+113.5	3/
Automobiles	568	540	28	4.9	477	419	58	12.1	- 16.0	- 22.4	+107.1
Nonferrous metals and their products	358	296	62	17.2	371	310	61	16.5	+ 3.6	+ 4.7	- 1.6
Lumber and timber basic products	532	523	9	1.7	484	459	25	5.2	- 9.0	- 12.2	3/
Furniture and finished lumber products	404	367	37	9.1	356	305	51	14.4	- 11.9	- 16.9	+ 37.8
Stone, clay, and glass products	389	336	53	13.7	355	297	58	16.4	- 8.7	- 11.6	+ 9.4
Nondurable Goods Industries	5,490	3,314	2,176	39.6	5,566	3,280	2,286	41.1	+ 1.4	- 1.0	+ 5.1
Textile-mill products and other fiber manufactures	1,299	719	580	44.7	1,253	661	592	47.2	- 3.5	- 8.1	+ 2.1
Apparel and other finished textile products	913	220	693	75.9	848	191	657	77.5	- 7.1	- 13.2	- 5.2
Leather and leather products	375	225	150	39.9	350	196	154	44.1	- 6.7	- 12.9	+ 2.7
Food and kindred products	1,049	751	298	28.4	1,123	790	333	29.6	+ 7.1	+ 5.2	+ 11.7
Tobacco manufactures	97	31	66	68.0	99	33	66	66.9	+ 2.1	+ 6.5	0
Paper and allied products	329	249	80	24.2	296	219	77	25.9	- 10.0	- 12.0	- 3.8
Printing, publishing, and allied industries	349	278	71	20.3	325	252	73	22.5	- 6.9	- 9.4	+ 2.8
Chemicals and allied products	459	380	79	17.2	650	503	147	22.6	+ 41.6	+ 32.4	+ 86.1
Products of petroleum and coal	123	122	1	.5	126	125	1	.9	+ 2.4	+ 2.5	3/
Rubber products	162	119	43	26.5	162	104	58	36.2	0	- 12.6	+ 34.9
Miscellaneous Industries	335	220	115	34.3	334	206	128	38.2	- .3	- 6.4	+ 11.3

1/ The classification of industrial establishments, for the most part, are based on regular peacetime activities of the reporting establishments.

2/ October 1942 estimates are preliminary. These estimates are based on the Bureau's revised series of factory employment adjusted to levels derived from data reported by employers under the State Unemployment Compensation programs, made available by the Bureau of Employment Security of the Social Security Board.

3/ Percentage changes are not computed where less than 10,000 female wage earners were employed in October 1941.

News
Detroit, Michigan
December 10, 1942.

TWO TYPES OF INSPECTION WORK OPEN TO WOMEN IN WAR FACTORIES

by Hunter Williams

Your dictionary, Miss Jones, informs you that inspection meant "to examine critically, test officially, scrutinize carefully."

Routing inspection of small parts in a war plant is carried out systematically, not so much to find out if the parts are absolutely perfect as to find out how much they are wrong.

A factory has an order for 10,000 carburetors of a certain type. There are about 450 separate and distinct parts in such a carburetor. This means that at least 10,000 of each part will be produced from some kind of metal--steel, iron, aluminum, brass, copper or whatever the specifications call for.

In factory production, it is not practicable to produce thousands or even hundreds of parts which are absolutely correct in every dimension. Indeed, any two like parts may vary in one or more dimemsions.

BLUEPRINTS

This difficulty in factory production is overcome by setting limits for variations from the standards as shown in the blueprints and there is usually a blueprint for every part. A blueprint is a diagram or drawing in white lines on blue paper. The dimensional figures and notations also appear in white.

To cite a very simple example, a certain bolt is shown on its appropriate print as .750 (seven hundred and fifty thousandths) of an inch in length and .125 of an inch in diameter--that is, 3/4 of an inch and 1/8 of an inch, respectively. The blueprint shows there is an allowance from the standard of 3-1000 of an inch for each dimension--that is, from .747 to .753 of an inch for the length dimension and .122 to .128 for the diameter or thickness dimension.

If the dimensions are within those limits, they are correct to he print. This is an extremely simple illustration of measurements you will encounter daily in both bench and floor inspection.

* * *

If you are assigned to bench inspection, you measure with certain kinds of measuring instruments the dimensions of parts after they have been machined, after they have been reduced to a certain form or shape, a certain height, breadth and thickness. You also may be required to measure the depths of holes drilled into a part or parts, the diameter of these holes and also observe whether the walls of these holes are rough or as smooth as silk. Many of these holes, after being drilled, are threaded, or "tapped," as they say in shops. Most women are familiar with the common stove bolt, which is threaded on one end and screws into a nut which is also threaded.

Beginners at bench inspection usually are assigned to inspect one part of rather simple characteristics. They work under the supervision of a man or woman who knows this part thoroughly, every measurement of it.

While you are doing your bit on this one part, a small army of inspectors will be inspecting other parts of the same unit, the carburetor. Presently the inspected and approved parts go to the final assembly line where they are put together in the completed carburetor. An automobile is brought to the assembly point in exactly the same way.

LOST LABOR

The parts not approved because one or more measurements may be over or under the limits set in the print are returned to the machine line or elsewhere for correction or repairs. If correction is impossible, the part is scrapped or discarded and becomes a complete loss. All the labor on it has been wasted both at the machines and in the inspection department. When the wastage is high, operating costs rise terrifically.

Bench inspection is done at a bench or table. Usually beginners do one operation at a time. There are a hundred parts on the bench, all apparently alike. But they aren't, no two of them. One drill hole, we'll say, is $\frac{1}{4}$ of an inch in diameter. This diameter usually is measured in all the 100 pieces successively before going on to the next inspection point.

When an error is discovered, a tag uaually is attached to the part. On it is a notation as to what is wrong. If all the inspection points are within the limits set in the print, the inspector stamps it with some form of an okay stamp.

* * *

The first inspection of parts is made at the machines where the operations are being performed by men or women. This is called floor, line or operating inspection. Different factories use different terms.

Floor inspection is made right at the machine where the several operations are being performed or at a table or bench near the machines which is known as the inspector's table. It is the floor inspector's job to get out the gauges and print at the start of the day's work. It is not unusual for a floor inspector to have from 25 to 50 gauges on his table during the day.

Some floor inspectors leave the appropriate gauges with each operator; some keep all the gauges on the inspection table. Whichever course is followed, a careful inspector does the gauging and inspecting himself. He or she is responsible for the production on a line of machines.

MACHINES CAN ERR

The purpose of floor inspecting is to catch mistakes at the machines. To the unitiated it would seem impossible for errors to be made with modern machines and modern tools. But things do go wrong in the very best equipped factories. Drills get dulled from cutting into metal; chips get into the drill and threaded holes; operators don't always exert the same pull on the machine lever, etc. It is the alert floor inspector's job to patrol his beat of machines and catch these errors at the first possible moment, then stop the job and with help from the foreman or setup man make the necessary corrections saving time, labor and money.

Whatever role you may play as an inspector, bench or floor, it is tremendously important that you do your work well, and conscientiously. On your judgment may depend the life of that pilot who will be flying over Africa or a Marine who will fight for you in the Pacific.

Please return to Robinson

War Manpower Commission
Information Division

December 4, 1942

OCCUPATIONS IN WHICH THERE IS A DEMAND FOR WOMEN WORKERS

Professional and Managerial

Industrial Designer
Electrical Engineer

Skilled

Machine-Shop Inspector (Also in almost all other industries)
Aircraft Sheet Metal Worker
Milling Machine Operator
Installation Mechanic (Aircraft and parts)
Arc Welder
Engine-Lathe Operator I
Rotor Assembler (Electrical machinery)
Internal-Grinder Operator (gun)

Semi-skilled

Sewing Machine Operator
Engine-Lathe Operator II
Turret-Lathe Operator, Automatic
Milling-Machine Operator, Automatic — Allis Chalmers
Single-Spindle-Drill-Press Operator
Screw Machine Operator, Semi-Automatic
Lathe Operator, Automatic I
Floor Assembler
Chassis Assembler II (Electrical machinery)
Spot Welder
Detail Assembler (Aircraft)
Aircraft Riveter

Unskilled

Ammunition Shell and Bag Loading (process laborer)
Electrical Equipment (Process laborer)
Radio Manufacturing (Process laborer)
Laborers (All industries)

Process laborer occupations are unskilled jobs directly concerned with the fabrication of the product; whereas Laborer jobs are those servicing Process jobs and are themselves not concerned with processing.

SUPERVISORY & PERSONNEL Oct. 21, 1942

Dorothy Costello, supervisor of women, for International Harvester, 2572 University Avenue, St. Paul, Minnesota

Miss Anne Ketcham, Assistant Personnel Director, Central Service Division, Remingtom Arms, Bridgeport, Connecticut

Miss Ruth I. Stone, Hawthorne Works, Western Electric Co., Inc., Chicago, Illinois.

Dr. Millicent Pond, Director of Personnel Relations, Scoville Mfg. Co., Waterbury, Connecticut

Miss Vera Harris, Supervisor of Women, Boeing Bomber plant of Seattle, Washington (Boeing News, Sept. 1942 has a biographical sketch)

Mrs. ~~Miss~~ Loretta Moushey, Director of Personnel for Women, Monsanto Chemical Co.

Ellen M. Davies, Personnel Mgr., Chase Brass & C opper C o., Waterbury, Connecticut

Mrs. Marie Grubb, Supervisor of Women, Allison plant of General Motors, Indianapolis, Indiana

Mrs. Josephine Gomon, Supervisor of Women, Willow Run Bomber Plant, Ford Motor Co. Detroit, Mich.

Mrs. Norma W. Hendren, Head of Industrial Relations work for women Penna. Ordnance Works

Lucy Ogden Norton, Supervisor of Women, General Electric, Erie, Pa.

Miss Wilhemina Carver, Supervisor of Health, American Pulley Co., Phila. Pa.

Miss Alberta Johnson, Personnel Dept., Allis-Chalmers, Milwaukee, Wisconsin

Mrs. H. T. Brooks, United States C artridge Co., St. Louis, Mo.

Mrs. Rosalie Day, Welfare Dept., Twin Cities Ordnance, Minneapolis, Minnesota

Mrs. Sara Sparks, Director of Personnel service and customer relations for the Western Union Telegraph Co. (Army Engineering Relief) (She has been loaned by her company to serve as vice-chairman of the bureau).

Oct. 24, 1942

SUPERVISORY AND PERSONNEL

Elizabeth Wege, Supervisor of Women
Bell Aircraft (also Niagara Falls Plant)
New York

Thompson Aircraft Products now has 25 women for supervisors over women
also plans to have women personnel

Parker Appliance Co. (aircraft parts) has women for both supervisory and personnel
17325 Euclid Ave., Cleveland, Ohio

Miss Mary M. Aikin, Supervisor of Women, Axle division, Eaton Mfg. Co.
Cleveland, Ohio

Mrs. Elinore Herrick, Personnel director, Tood Shipyard Corp.

Miss Phyllis H. Gandee, Public Relations Dept. Consolidated Aircraft Corp. San Diego
California

Ellen M. Davies, Personnel Manager, Waterbury Plant, Chase Brass & Copper Co.
Waterbury, Conn.

Negro woman has been appointed as assistant to the director of Negro personnel at the Twin Cities Ordnance Plant, New Brighten, Minn. (Okla. City Black Dispatch, Nov. 28, 1942) Her name is Mrs. Edith Maxwell Williams. She is a graduate of the University of Minnesota.

U. S. Department of Labor
WOMEN'S BUREAU
Washington

TYPICAL OPERATIONS ON WHICH WOMEN ARE EMPLOYED IN WAR PRODUCTION

Code A - Women now used extensively
B - Women now used to some extent
C - Women now only used to a slight extent

The number of women could be increased in the above categories if further training were given either by job in-plant training, or preemployment or supplementary courses (the National defense training program), and subsequent upgrading.

Women are usually machine operators, doing semiskilled and repetitive work, but they are to a greatly increasing extent being trained on skilled operations and instructed to set up their own machines.

OCCUPATION

MANIPULATIVE SKILLS

Operating machines	
Drill presses - single and multiple spindle	A
Milling machines - light and medium, and micro machines	A
Light turret lathes and hand screw machines	B
Bench and watchmakers' lathes	A
Grinding machines (surface, cylindrical, and internal)	B
Gear shaping, cutting and hobbing machines	B
Light punch and forming presses	A
Miscellaneous machines: Profilers, shavers, nibblers, shapers, routers	B
Automatic screw machines	C
Woodworking machines: Saws, sanders, shapers, profilers	C
Nailing machines	C
Power sewing machines	A
Optical and opthalmic glass grinding and polishing	B
Burring, polishing, lapping, buffing, etc. on lathes, drill presses, polishing jacks, and other machines	A
Hand finishing machined parts by filing, burring, lapping	A
Hand gluing (for example, of plywood parts)	C
Sheet metal forming and riveting	B
Welding	
Acetylene and torch	B
Electric arc	C
Spot	B
Soldering	A

Over

I. MANIPULATIVE SKILLS Cont'd.	
Electrical work - wiring and assembling parts, winding coils and armatures, soldering, taping, etc.	A
Assembly - all types of light sub and final assembly(often requiring the use of hand tools as pliers, mallets, screw drivers, files, electric drills, bench assembly machines, and riveting presses)	A
Artillery ammunition loading (bag and shell loading, fuzes,primers,etc.)	A
Operations on bullets, cartridge cases, and primers in small arms ammunition	A
Servicing and repairing of planes at air depots (ground mechanics)	B
Painting	
Spray painting small parts and products	B
Touch up and hand finishing	A
Radium	A
Stenciling, masking before painting, racking and unracking	A
Shipfitters and loftsmen	C
II. INSPECTION	
Visual	A
Gage, micrometer or caliper (sometimes with blueprint reading)	A
Calibrating	B
Checking and testing raw materials, stock and salvage parts	B
III. PACKING - labeling, etc.	B
IV. FACTORY SERVICE	
Production planning, routing and control	C
Draftsmen and tracers	C
Factory clerks (timekeepers, stock record clerks, etc.)	B
Tool crib and stockroom attendants and dispatchers	B
Crane operators	C
Guards	C
Electric truck drivers, intra-plant loading and hauling	C
V. SUPERVISING (foreladies, leadwomen, group leaders)	C
VI. TRAINING (in-plant)	C
VII. PERSONNEL RELATIONS	
Personnel administration (director, assistant director, assistant)	B
Employment - interviewing and hiring	B
Nursing	A
Welfare	A

LABOR TRENDS
In Modern Industry, July 18, 1942, pages 87-88

More Women Working

First definite confirmation of broad governmental estimates of the increased employment of women in industry is contained in reports of a survey made by Modern Industry among its readers.

This study, based upon answers to a questionnaire submitted to 1,000 top executives in industry, indicates that the increased employment of women will be far more widespread than has been previously indicated in government studies.

The results confirm the general expectation of increased female employment in such industries as munitions and aviation. But they further reveal that the shift to women employees extends even to textiles, where employment of women might have been assumed to have reached a saturation point, and to foundries, which have long been regarded as solely the province of male workers.

The percentage of women employed a year ago, today, and (estimated) a year from now, in typical individual plants responding to the questionnaire is shown in the table below.

Answers to other questions in the Modern Industry study covered a number of other phases of the employment of women. That their employment presents a number of tough new problems to management is statistically proved in the detailed report, copies of which will be sent to Modern Industry Readers upon request. Segregation of women by departments has apparently been discarded by modern employment managers. An overwhelming majority indicate that men and women work satisfactorily side by side. Supervision of women by male foremen and gang leaders is generally found to be most efficient, but nearly half of these indicating such a preference recommend the employment of women sub-foremen or welfare workers to serve as management representatives between the male foreman and the actual woman worker. This practice proved to be of value in textile mills here for many years and in England's war industries in recent months, is given a surprisingly heavy endorsement.

Percent of Women Employees in Individual Plants

Type of Plant	1941	1942 Percent	1943*
Baking	10	35	75
Instruments	10	35	60
Aviation	1	15	65
Instruments	40	65	85
Electrical	6	9	35
Firearms	5	8	20
Manufacturing	0	0	40
Manufacturing	15	30	40
Pharmaceutical	45	55	75
Tool and Die	2	2	20
Packing	0	16	30
Aircraft	2	20	20
Hosiery	65	75	85
Foundry	2	5	6
Paper	5	6	18
Engineering	0	5	15
Aircraft	4	13	25
Aircraft	5	60	80
Lamps	25	33	40
Manufacturing	15	20	30
Machinery	0	10	50
Bakery	50	60	75
Textile	50	60	75

* Estimated.

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WOMEN in OHIO WAR INDUSTRIES.

The principal wom~~e~~an-employing war industries in Ohio are the aircraft and parts industry, and ordnance manufacturing, ~~which~~ The latter includes shell loading, the manufacture of artillery components, cartridges, tanks, tank parts, gun mounts, etc.

Ohio has been very slow in taking on women in these industries but now there is a notable increase in job opportunities for women, even a scarcity of women workers in the Ravenna, Akron and Youngstown reg~~i~~ion. Many plants that have not previously employed women are now providing facilities for their employment.

It has been estimated that when the war industries have reached their peak production and the anticipated number of men have been inducted into the service, ~~that~~ over twice as many women will be needed in the war industries as were employed in the manufacturing industries at the time of the 1940 census, and at least half of these will have to be trained.

19

AIRCRAFT and PARTS INDUSTRY.

New plant construction and conversion programs have been one of the outstanding industrial developments in Ohio in the past few months.

In A number of plants, many formerly making automobiles and electrical equipment will begin large-scale hiring when conversion to production of airplane parts is completed. Up to now, relatively few women have been employed in this industry; three of the large plants are now employing less than 1000 women. However, more than half of the thousands of new workers to be added by these firms will be women.

As many as 50,000 additional workers will be required by this industry within the year, and more than half of these employees will be women.

Aircraft and Parts Industry

9c. ORDNANCE.

The ordnance industry is also undergoing further expansion. Large new plants are being built, those already in operation are expanding rapidly, and other plants are being converted for the manufacture of ordnance products. Over 40,000 new workers will be taken on this year, and one half or more will be women. Cleveland now employing about 1000 women in this industry plans to triple the number of women on their payrolls during the next six months, and other plants not now employing women will hire them in large numbers. One large new plant being built in the state plans to employ about 10,000 women.

In the Cleveland Ordnance District, in March, 314 women were employed on its inspection staff. By the end of 1942, the Ordnance Office, expects that 50-60 percent of its inspectors will be women. They receive the same training as the men.

RUBBER.

In most cases, the opportunity of released rubber workers, for re-employment is very good, as rubber companies are requiring large numbers of workers for their new ordnance and aircraft departments, and there is a tendency to hire women wherever possible. Over 8,000 women were employed in the rubber industry in Akron in July,'41, and the larger women-employing plants now have war contracts that will require many more workers . The rubber industry in general has been reconciled to the fact that experienced workers are no longer available and they see the need for training inexperienced workers and hiring women to an increasing degree.

Rubber companies are accustomed to making quick changes in production and for that reason were able to transfer to war production more readily than most industries. The companies have branched out more and more into non-rubber production and employment now is definitely on the up-swing. Those persons who were temporarily laid off have been or are being recalled, and no further large lay-offs due to curtailment of rubber are anticipated because of rapid conversion to war items other than rubber.

TRAINING.

here insert table from next page.

Industry in general is working on the training of women wherever possible to offset the depletion of young men. Up to 3/28/1942, No women could be referred to N.D.T.training classes unless there was relative assurance they could be employed. Up to this time there had been no women in the training classes in either Cleveland or Cincinnati. In The week ending March 28,1942, the first group of 46 women were placed in the machine shop classes in N.D.T. training schools of Cleveland to receive 10 weeks training. Cincinnati was more backward than Cleveland in training women.

The Goodyear Aircraft plant has set up a large scale pre-employment training program for men and women.

Curtis Wright, also has set up its own training school, where it trains most of its unskilled workers. It has a machine shop course and an aircraft, riveting and sheet metal fabricating course, each six weeks in duration. In December 1941 women were first placed in this training school and in March there were nearly 300 in the sheet metal and fabricating classes. They are given same training as men. All women must be trained in this school prior to employment unless they have some exceptional skill or abilitiey. Practically all the women now employed except for some inspectors and power machine operators have gone through this school.

to preceding page

~~TRAINING:~~

Extent of training of women in Ohio all [illegible] N.D.T. program

	TOTAL	WOMEN	
		NUMBER	PERCENT
Pre-employment			
Cumulative, July 1, 1941--April 30, 1942	45,688	3977	8.7
On active file, April 30, 1942	11,054	1721	15.6
Supplementary.			
Cumulative-July 1, 1941-April 30, 1942	18,401	243	1.3
On active file,-April 30, 1942	5,567	161	3.0

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DOMESTIC COMMERCE

A Weekly Bulletin

OF THE NATIONAL ECONOMY

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1942

Women in Industry
See page 3

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INDUSTRY OFFERS INCREASING OPPORTUNITIES FOR WOMEN

By Raymond Reeves

Regional Business Consultant, San Francisco

"Four million new workers not now working will probably have to be brought into war production this year," according to Eric Nicol, Special Assistant in the Labor Division of the War Production Board. That's a big order at any time; but since it comes just at the time the armed forces are drafting more and more men, increased employment opportunities for women are inevitable.

Careful studies are already being made of the type of jobs women can best fill. The Women's Bureau of the Department of Labor has published detailed analysis of the specific jobs which women can do in small-arms ammunition plants, in aircraft assembly, in artillery ammunition plants, and in the manufacture of instruments for surgical, dental, optical, aircraft, and fire-control purposes.

Revision of Regulations Asked

The trend toward increased employment of women has already been dramatized by the strong plea which representatives of the Southern California aircraft industry made before the State Industrial Welfare Commission. The aircraft group urged abrogation of the present California ruling which prevents the employment of women between 11 p. m. and 6 a. m. except upon special permit and payment of time and one-half for all work done between those hours.

The Commission is now revising the manufacturing order and probably will eliminate the provision prohibiting women from night work. Such a change seems advisable in view of the fact that 56 major defense plants have already told the California Department of Employment that they plan to hire 264,000 new workers — a 31-percent increase — during the first 6 months of 1942.

Aircraft Plants Already Employing Women

Women are already working in aircraft factories, but the number so employed is relatively small. Lockheed recently offered jobs in its plants to all widows of Navy men killed at Pearl Harbor, if they needed work and were capable of handling jobs. North American Aviation Co. has long used women for sewing and covering control surfaces of airplanes at their Inglewood, Calif., plant. The Dallas plant of this company tried using women in additional work and found it so successful that it became a permanent policy there, and a decision was made to extend the policy to the Kansas City plant. Now the Inglewood plant is using women in the electrical subassembly department on all phases of subassembly electrical work, including electrical switch boxes and instrument panels.

Marshall E. Beaman, Director of Industrial Relations, has announced: "We plan to use women on any job possible. Applicants need not have any industrial background to qualify for positions. However, we are giving preference to women whose husbands have been called into military service."

Workers Praised for Skill and Dexterity

How are women working out in these new jobs? Several months ago the president of Fairchild, J. Carlton Ward, Jr., said, "We are beginning to find that there seems to be no work dependent upon skill and dexterity that women cannot be taught to do very well. In fact, women have superior tactile sense and much greater patience at repetitive tasks than men. They also have unusual ability to follow instructions literally and skillfully."

Today, after several months' experience, the company summarizes its views this way:

"They have proved, on the whole, good workmen; though the same differences in skills and temperaments may be observed among them as may be observed among men. We use them both in groups of women and on the benches and lines with men. We have had equal success with one man and one woman on a riveting team and with two women. They do all kinds of light sheet-metal work except the handling of heavy machine tools. They are particularly skillful as welders, both acetylene and arc. They are excellent at woodworking and finishing; though, for health reasons, we have kept them out of the paint shops. They show fine adherence to prescribed routines in sub and major assembly."

As if to back up this opinion, Fairchild employs women at tasks formerly regarded as men's jobs. These tasks include riveting, sheet-metal work, woodworking, and setting-up work on jigs.

Many Seek Further Training

Officials of Vultee answer the question of how well women work in their plant by reporting that women have less tendency to move from plant to plant than men, and a larger proportion of women workers in this plant have taken advantage of free training classes. Basic to Vultee's successful use of women, right up into the final assembly line, was careful preparation for the introduction of women into some of these departments.

Another important item of Vultee policy is that all the supplementary training courses given by the plant are open to women. This assures the most effective use of women all along the production line and provides them with opportunity equal to that of men in any promotion or up-grading.

Women were leaders in the movement to work complete shifts on Sunday, January 4, and donate the value of their wages to the Government. This, together with the company's contribution in materials and overhead, resulted in a free gift of five Fairchild PT-19 Primary Trainers to the U. S. Air Corps. The women were likewise leaders in the Defense Savings Stamp drive that week, in which the company's employees purchased $27,000 in stamps alone, or $6 per capita. The entire community bought $460,000 in stamps and bonds, or a little over $6 per capita for both stamps and bonds.

Our Hagerstown Aircraft Division plant now employs about 400 women there, and the number will be increased to 1,500 by summer. -- John Stuart, Assistant to the President of Fairchild Engine and Airplane Corporation.

Percentage of Women in Industry Increasing

How far can the current trend toward increased use of women in industry go? That will be hard to predict; but at the close of the first World War women comprised 20 percent of the employees in United States aircraft factories. Current reports indicate that in Germany and Great Britain 40 to 50 percent of aircraft workers are women, and one leading authority predicts this figure will rise to 80 percent in Great Britain. Lt. Col. Joseph F. Battley, Chief of the Labor Division of the Office of the Under Secretary of War, reports that 30 percent of the total employment in heavy manufacturing in Great Britain is now filled by women.

A study issued by the California Department of Employment in November 1941 succinctly states the problem in these words: "In some areas, experienced and capable male workers are not available, and the reservoir of trainable men is almost exhausted. Yet, thousands of additional workers will be required before the peak of defense employment is reached."

REPRODUCED AT THE NATIONAL ARCHIVES

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REPRODUCED AT THE NATIONAL ARCHIVES

WOMEN'S WAR WORK IN GREAT BRITAIN */

In this war, British women have either taken their places beside men in the organizations which are open to them, or have set up their own organizations to assist in the national effort. Besides the great number of women who, as a result of war, will be absorbed into the professions and industry--especially munitions work--thousands have come forward to do special war work, some in paid positions and some to do voluntary work.

Huge Job in Industry

Women's greatest contribution to the war will undoubtedly be in the industrial field. In July 1939 there were 4,088,900 women in insured occupations, including agriculture, engineering, textiles, distributive trades, manufacture of motor vehicles, cycles, and aircraft, and in the metal trades. The need for more women in industries increases rapidly as new factories come into production and as more men are drafted for the Army.

Compulsory registration has been introduced for women not already engaged on work of national importance. Women born between 1910 and 1920 were registered by January 1942. The present plan is to interview registrants and suggest the most useful sphere for each case.

Equal Pay for Equal Work

Women's entrance into industry is taking place in an orderly fashion and in full agreement with the trade unions. The principal of equal pay for equal work is being increasingly recognized.

For women not yet qualified to do men's jobs, there is an initial training period of 32 weeks. During this period pay starts at normal women's rates and gradually increases until it is equal to that of a man doing the same job.

Government Measures Facilitate Movement

The Ministry of Labour is facilitating the introduction of women into industry by various measures. Women are being trained by the 9,000 or so firms which the Government requested to make arrangements for increasing the skill of their workers. The Government also provides preliminary training courses for women going into industry. A Factory and Welfare Advisory Board has been set up to work in close connection with the Labour Supply Committee.

The Ministry of Labour and the Ministry of Health are also setting up nursery centers, conducted by trained persons, to relieve working mothers' responsibilities for their children during the day. Arrangements are being made for the billeting and feeding of many factory workers. Every precaution has been taken to safeguard the health of workers. The Ministry of Labour has powers to compel factory owners to appoint doctors, nurses, and welfare officers.

Women's Land Army

In view of the expected shortage of men for agriculture in case of war, the Women's Land Army was set up early in 1939, under the Ministry of Agriculture. The purpose is to train women who would then hold themselves available, for the duration of the war, to work on the land as required.

Women may be enrolled in the Land Army as whole-time or part-time mobile or local workers. Training preference is given to whole-time mobile workers. Registrants are given a 4-week training course, in any branch of farm work which they may choose, at an agricultural college or on an approved farm.

During training, the Ministry gives these workers a personal allowance of 10 shillings a

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*/ Summarized from a release of The British Library of Information, 30 Rockefeller Plaza, New York, N. Y.

week and board and lodging. Khaki uniforms are provided free by the Government. The WLA undertakes the task of placing the women when trained. When employed, these girls must be paid at the rate of 32 shillings a week, or board and lodging plus 16 shillings a week, or the current rate of pay for agricultural labor in the country, whichever is highest.

Members of the Women's Land Army are not in any sense Government employees. They receive no pay when trained, unless they are employed by a private farmer. They undertake all kinds of agricultural work. The greatest demand so far has been for dairy workers; about three-fifths of the girls in employment are milkers. Tractor driving has been one of the most popular courses, and women have proved surprisingly successful in forestry and lumber work.

Women With the Forces

The Auxiliary Territorial Service, the Women's Royal Naval Service, and the Women's Auxiliary Air Force are the organizations working with the Army, the Navy, and the Air Force, respectively. They are organized on military lines and are subject to military discipline.

The Auxiliary Territorial Service was part of the Territorial Army and has now been incorporated with it into the British Army. Its members are recruited among women from 18 to 43 years of age. They are provided with khaki uniforms. They serve as cooks, telephonists, storekeepers, drivers, range finders, predictors, and gunnery researchers.

Except for a few ex-officers from the last war, all members must go through the ranks. Pay varies according to the trade. Over 40,000 are now enrolled.

The Women's Royal Naval Service works with the Navy. Members are recruited among women from 18 to 50 years of age, who join for 4 years. They wear a navy blue uniform. They serve as cooks, clerks, teleprinters, cipherers, laboratory assistants, parachute packers radio telegraphers, and signallers.

Pay starts at 1 shilling 8 pence a day for mobile categories, with a slightly higher rate for special trades. Immobile members start at 1 shilling 4 pence, with lodging allowance. Promotion is from the ranks, but all officers must be mobile.

The Women's Auxiliary Air Force works with the Air Force. Its members are not given flying training, but do ground work. They are recruited among women 18 to 43 years of age. The uniform is of Air Force blue, somewhat similar in design to that worn by the A.T.S. The W.A.A.F. has been given full status as part of the Crown Forces. Pay starts at 1 shilling 8 pence a day in wartime, with proficiency allowances for tradeswomen. Women serve as drivers, mechanics, parachute repairers and packers, radio operators, cooks, bomb plotters, and laboratory assistants. The strength at the outbreak of the war was 10,000, but the number has greatly increased.

The Women's Section of the Air Transport Auxiliary, consisting of women pilots, ferries aircraft from the manufacturers to Air Force stations.

Civil Defense Units

Many women are working in the A.R.P. (Air Raid Precautions). They serve in numerous capacities--as wardens; in the auxiliary fire service; as ambulance drivers; in manning communication posts; at report centers; and at first-aid posts. About one-third million women are serving in such units on a whole-time or part-time basis.

Women's Voluntary Services

The Women's Voluntary Services, which numbers around a million members, has organized women volunteers to help in every kind of civil defense and war emergency work. Nearly all the women's organizations in Great Britain --religious, professional, and political--have affiliated themselves with the W.V.S. Members may (but are not required to) wear a uniform consisting of gray-green suit, rust-red blouse, and green felt hat with rust band. The W.V.S. is not organized in military fashion.

The work of this organization was begun in May 1938 to help bring home to every householder in the country what air attack means

(Cont. on Page 13.)

MARKETING LAWS AND NATIONAL WELFARE*

By Elwood McCleish

III. Field of the Survey

The outstanding example of the legislative restraints imposed upon a free market is, of course, those legal controls devised by the States and found in statutes, administrative agency rules, and orders which have received wide publicity in the last few years under the name of "interstate trade barriers." It is against these restrictions upon what was once the largest free trade area in the world that the Department of Commerce, through its Inerdepartmental Committee and the Marketing Laws Survey, has waged a vigorous fight during the last 3 years. (Trade barriers, important as they are, constitute, however, but one part of the Survey's over-all study of trade regulation.)

What Is a Trade Barrier?

In this field the local merchant is found seeking the aid of his community and State government against the so-called "foreign" competition from the neighboring State. Minority groups organize aggressively, invoke "health, safety, and morals" and sway State legislatures to put an amazing variety of pious enactments upon the statute books. Local advantage turns a deaf-man's ear to national economic well-being. Of course, some of the regulations unintentionally operate as barriers because of the piling-up of conflicting State laws on the same subject. Most of the interstate trade-barrier laws are, however, intentional, a fact implicit in the definition devised by the Marketing Laws Survey which has become the accepted definition of this type of control.

The Survey, in April 1939, defined a trade barrier as "any State statute or regulation, which, on its face, or in practical effect, tends to operate to the disadvantage of persons, products, or services coming from sister States, to the advantage of local residents, products, and business."

The impact of these types of law upon the economic system as a whole, the sudden new handicap to an all-out war program, and the conflict aroused thereby with the traditional purpose of our Constitution to establish a national free trade area are self-evident consequences.

Two Supreme Court Opinions

The problem has perhaps best been expressed in two opinions of the United States Supreme Court.

In Baldwin v. Seelig (294 U. S. 511) (1935)), holding unconstitutional the attempted control by New York State over prices of milk imported from other States, Mr. Justice Cardozo said:

"What is ultimate is the principle that one State in its dealings with another may not place itself in a position of economic isolation. Formulas and catchwords are subordinate to this overmastering requirement. Neither the power to tax nor the police power may be used by the State of destination with the aim and effect of establishing our economic barrier against competition with the products of another State or the labor of its residents. Restrictions so continued are an unreasonable clog upon the mobility of commerce. They set up what is equivalent to a rampart of customs duties designated to neutralize advantages belonging to the place of origin. They are thus hostile in conception as well as burdensome in result."

The United States Supreme Court in the more recent Arkansas Tax case (McCarroll v. Dixie Greyhound Lines, Inc., 309 U. S. (1940)), holding unconstitutional a law prohibiting the entry into the State of any motor vehicle carrying more than 20 gallons of gasoline in its tank until the State tax thereon had been paid, said: "Maintenance of open channels of trade between the States was not only of paramount importance when our Constitution was framed: it remains today a complex problem calling for national vigilance and regulation."

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*Continued from the March 12 issue.

This is the decision, by the way, in which unusual honor was paid to the Survey; the findings of the Survey, as published in its book, Comparative Charts of Trade Barriers, were incorporated in the dissenting opinion, not as a reference but as an integral part of the decision. It is one thing to be a footnote in fine type; quite another to be the language of the decision itself.

The Field Enlarged

The Survey had passed from its analytical arrangement of the general laws governing monopolies, exemptions from antitrust acts, antidiscrimination measures, contracts not to compete, exclusive-dealing arrangements, and State price controls, to the application of specific statutes to specific industries and trades. The whole picture of trade regulation could, it was decided, be more clearly shown and the findings could become more useful to business, government, and students of law and marketing by showing the intricate nerve system of law and administrative agency action within the body of particular enterprises.

Specific Groups Studied

Sixty industries and callings of recognized importance in the national economy were selected and classified. These studies were apportioned to the four Regional Offices with the basic instruction to collect all statutory provisions and pertinent court decisions in each and all of the 48 States governing, directly or indirectly, the conduct of enterprises as diversified for instance (to list a few of the topics assigned), as advertising; amusements; building industry; chain stores; fish and game; hotels; motor vehicles; explosives and firearms; fraudulent practices; insurance; mines and mining; petroleum; steel; storage and warehousing; bedding and mattresses; sales promotion devices; packing houses; agricultural products; bakeries; bottlers and canners; cider and vinegar; commercial feed; commercial fertilizer; cooperatives; eggs and poultry; fruits, nuts, and vegetables; grain, flour, and rice; hides and leather; livestock and meats; nursery stock and plants; margarines and butter; public markets; salt; timber; tobacco.

Dilemma of Small Business

In the channels of distribution charted as these studies progressed, and as arm-high shipments of folders came into Washington week by week from the field offices, it became clear where the currents of business were turning into the protected harbors where large concentrations of economic power held sway and where shoal waters and obstructed channels made hazardous the course of the man engaged in small business. There was visible evidence in the mass of trade-regulation laws compiled over the last decade that two great forces — the one economic and not as yet measured by the Survey, and the other legal — were at work, constantly releasing a flood of enactments. Small business enterprises were caught in the converging swirl of these forces. Interest in small business has been sharpened in focus for us who have been selecting and arranging the Survey materials for the last 3 years under the administration of the Bureau of Foreign and Domestic Commerce.

"Small" business (who needs to be reminded) still constitutes the greater part, by numbers, of the Nation's business enterprises. It is estimated that there are roughly 2,400,000 separate business establishments in the United States, more than 29 percent of which are "small" — that is, with less than $250,000 in total assets. Of these 2,400,000 business establishments, more than half are engaged in trade. The second-largest stronghold of small business is the service field, including restaurants, hotels, amusements, cleaning establishments, the personal services, and other noncommodity services. Finally, small manufacturing firms comprise about 80 percent by number, of all manufacturing concerns. Recent developments in marketing have brought new pressures to bear upon these businessmen. Many are breathing hard in a struggle for survival that is reflected directly in trade-regulatory legislation.

IV. The Survey's Contributions

The field in which the Survey has conducted its work is a broad and significant area of the national economy. What contributions has the Survey made?

Private Restraints

In the field of legislation designed to regulate the exercise of private restraints — that is, in the field of monopolies and competitive price practices — the Survey has made two important contributions. These consist of two published volumes, the first entitled "State Anti-Trust Laws" and the second, "State Price Control Legislation." Their publication dates were awaited with interest by the law schools of leading universities, by great corporations maintaining economic and legal research staffs, by trade associations, and by outstanding students of law and marketing. More than 500 copies of each were requested by a score of Federal Departments and agencies.

Public Restraints

In the field of public or governmental restraints, the Survey has made outstanding contribution with the volume entitled "Comparative Charts of State Laws Illustrating Barriers to Trade Between the States." This volume, the most widely known of the Survey's works, immediately became the leading source book for this type of barrier legislation, even though it did not purport by any means to present an exhaustive compilation.

Also in the field of public restraints, the Survey proposes to present the licensing requirements imposed upon entry into a long list of professions, trades, and occupations. The importance of this study (which will be Volume VI in the Marketing Laws Survey series and will bear the title "State Occupational Regulations") can only be reemphsized because of the vital need of opening up all possible fields of entrepreneurship to the small-businessmen who may be forced out of their present lines of endeavor by the pressure of the war program. The presses are now running off this fairly bulky volume with its profusion of analytical administrative charts.

Specific Industries

In the presentation of legislation regulating specific industries, the Survey has already completed two studies for general publication, one dealing with laws regulating the liquor industry, the other with laws and administrative agency controls regulating the milk and dairy industry. Volume III, State Milk and Dairy Legislation, will be ready for distribution during March. Volume IV, State Liquor Legislation, is now waiting its turn on Government presses.

The seventh major study, an over-all analysis of the laws pertaining to the food industry, is in manuscript under review. Here the Survey is considering an industry whose products are of first importance to the welfare of the Nation. Any maladjustments in the industry due to unwise laws should be brought to light, as should any restraints imposed upon the most economic functioning of the various phases of the industry. This study has been broken down into several major divisions into which the laws pertaining to the processing and distribution of the Nation's food supply most readily fall. One section of the study involves an analysis of the statutes regulating special types of producers, processors, and dealers, and includes several distinct types of enterprise. Among such enterprises are commission men, chain stores, cooperatives, commodity exchanges, vending machines, and bottlers and canners.

Taxation and Revenues

In the field of State taxation and revenues, another major study, perhaps the most important undertaken, is now well under way in the New York office. This study, planned for four volumes, is expected to make available for the first time an accurate, low-cost, and readily usable picture of the taxes and the tax structures of the 48 States. It is the hope that these tax volumes will prove invaluable to businessmen and to taxpayers of all types, to State and other government officials, to attorneys, to teachers and students of public finance, and, in general, to all those whose work brings them in contact with problems of State taxation. At the present time nothing comparable to this acutely needed compilation is available.

State Control and Regulation

The concept of "marketing," which has formed the basis of the Survey's program since its inception, is broad in scope. It encompasses the field of governmental control and regulation of (1) production, transportation, distribution, and sale of commodities; (2) business and industrial activities and establishments; and (3) performance of service. The Survey's extensive research of State statutes and court decisions, its assembling and classification of materials according to an authoritative outline and plan of studies, and the training and experience of its research and legal staff in Washington and in the Regional Offices in New York, Chicago, and Los Angeles, have equipped it to undertake major studies on the subject of State control and regulation.

What might have completed its tasks by furnishing academic tools to guide specialized research by others has now entered the field of action. Under its new direction by the Bureau, the Marketing Laws Survey moves forward to contribute its resources in attaining the objectives of the Department of Commerce.

Publication Program

The nature and breadth of the Survey's research and publication program, as it has developed during the first 3 years, claim another moment of attention. The following outline embraces these studies. (Double asterisks denote volumes published or in press or now in manuscript form, and single asterisk denotes volumes in preparation.)

1. Analytical classification of State laws according to —
   a. Types of control and regulation, such as —
      ** State Anti-Trust Laws (1940)
      ** State Price Control Legislation (1940)
      * State Taxation
      ** State Occupational Regulation
      State Standardization and Grading
      State Licensing and Inspection
   b. Types of commodities and services regulated, such as —
      ** State Milk and Dairy Legislation (1941)
      ** State Liquor Legislation
      * State Regulation of Food Distribution (including marketing cooperatives; commission merchants; eating establishments; bottlers and canners; vending machines)
      * State Regulation of Specific Foodstuffs (including margarines, fats, and oils; livestock and meats; poultry and eggs; fruits and vegetables)
      * State Taxation of Foods
      * State Facilitation of Food Marketing (including marketing research; State advertising; and public markets)
      * State Regulation of Building Occupations
      * State Regulation of Transportation Occupations
      State Regulation of Textiles (including wool; cotton; silk; jute and hemp)
   c. Types of regulating agencies, such as —
      * State Administrative Agencies
2. State Trade Barriers
   a. Trade barriers in general
      ** Barriers to Trade Between States (with comparative charts of State statutes) (1939)
      ** Interstate Trade Barriers and Outlines of Studies (publication pending)
   b. Special studies on trade barriers

** Digest of State Laws Relating to the Problem of Interstate Trade Barriers (9 States) (1940)

* Bibliography on Trade Barriers
* Trade Barrier Statutes of 11 Western States
* Trends in Trade Barrier Legislation, 1941 and 1942

3. Other special studies (including State and local restraints on the war effort)

** Tabulation of Statutes on Service Trades and Occupations

* Bibliography on Defense Production Associations and Community Pooling Plans
* Bibliography on Taxation Building and Construction Industry Restrictions.

Reappraisal of the items enumerated, in the light of the impact of the war effort on our national economy, shows that the studies undertaken have special significance in the present emergency. They portray the complex variations and restrictions superimposed upon the Nation's economic pattern by a wide variety of State controls and regulations in the fields covered -- fields of enterprise and activity that bear importantly on the Nation's all-out war effort.

WOMEN PILOTS NEEDED

All of America's more than 3,000 licensed women pilots who become members of the Civil Air Patrol will be utilized to the full extent of their capabilities. This was made known in a recent announcement by the commander of the CAP in answer to questions as to whether women flyers would be given only minor assignments and missions in the patrol.

(Cont. from page 8.)

and to make known to every household what it can do to protect itself and help the community.

Among services rendered by the W.S.V. have been handling refugees from the Netherlands and Belgium and distributing them throughout the country; providing communal meals for evacuees and caring for evacuated children; organizing mobile and stationary canteens for troops, for civil defense workers, refugees, and civilians in bombed areas; providing staff for special food convoys serving bombed areas; cooperating with the Red Cross and other organizations in setting up Central Hospital Supply Services; providing mending and library services to all the Forces; listing, classifying, and generally organizing a blood-transfusion service; helping with the salvage drive and in the campaign against waste; setting up housewives' services whereby a woman resident of each street will have special information and duties in case of air raids, such as getting children in from streets, knowing location of nearest first-aid post.

Other War Work Done by Women

Many thousands of women in Great Britain are serving as trained nurses, assistant nurses, and trained auxiliaries. Many of the trained nursing auxiliaries have been through the home nursing courses and other courses organized by the British Red Cross Society, the St. John's and the St. Andrew's Ambulance Associations.

Many women are engaged in making up garments and other finished products for the Central Hospital Supply Service. Various groups are concrrning themselves with welfare problems, with organizing centers for preserving food, and with sewing and knitting for men in the Services.

TRENDS IN THE WOOL TRADE

y F. M. Owens

The supply position in raw wool at the beginning of the year appeared favorable. The Bureau of the Census reported 377 million pounds of apparel wool, (greasy basis) on hand or afloat to the United States on December 31, 1941, as against 263 million pounds a year earlier. Stocks of carpet wool were almost 17 percent higher at the close of 1941 than a year earlier, and totaled almost 67 million pounds. Stocks trend seasonally lower at the close of the year, but currently, in the face of record-breaking wool consumption throughout 1941, have declined less than in other recent years. In addition to commercial stocks of wool, there is a substantial reserve of Government-owned apparel wool.

Wool Substitutes in Demand

Conservation Order No. M-73, issued January 3 and amended February 25, curtailing the use of new wool, created an exceptionally strong market for wool noils, waste, reprocessed and reused wool, since these products were specifically precluded from limitation. These products can be used advantageously to substitute for new wool in the manufacture of woolens, but not worsteds. There has been, since the turn of the year, continued acceleration in the demand from manufacturers seeking substitutes for new wool, but prices under the ceiling continued to be considered too low by dealers, and holding off of sales has been noticed.

Demand for wool noils has been heavy, and there have been appreciable sales despite the ceiling prices. Mills operating both woolen and worsted units are in a favorable position, since they can use in their woolen branches noils accruing from their worsted combing. However, mills not employing the worsted system are not so favorably situated, as a number of large companies which previously sold their noils are now using them. Considerable quantities of wool noil are required for defense by knitters using so-called merino yarns (part cotton and part wool) for winter underwear and socks for the armed forces. Offerings of noils are becoming scarce.

Rayon Staple Fiber Usable in the Worsted Industry

Rayon staple fiber can be used readily, particularly in admixture with new wool, by the worsted branch of the industry. Some manufacturers have been using it over a period of time, but this use has not been general enough to enable manufacturers to become conversant with this material. Worsted manufacturers are to receive an appropriate share of this fiber, supplies of which are insufficient to meet greatly expanded national requirements.

Many Unfilled Orders for Worsted Yarns

At the opening of the year, total unfilled orders for worsted weaving and knitting yarns stood at almost 64 percent above the levels of a year earlier. In the aggregate, such unfilled orders stood at approximately 25 million pounds, 10 million pounds above the previous year's opening. Government business accounted for a large part of this increased percentage, but other orders were also greater. This was one of the major reasons for the slowness of the yarn market during the early months of 1942. Another factor was uncertainty over prices and over productive capacity which spinners could expect to use for civilian business.

Upholstery and Carpet Mills Seek War Orders

Firms producing automobile and upholstery fabrics, hit by shut-down in car production at a time when the trade in upholstery fabrics was slack, must obtain war orders or face grave losses. They and the automobile companies are burdened with large stocks of finished fabrics.

Manufacturers of wool carpets and rugs face a situation comparable to the plight of the upholstery fabrics people. Use of carpet wool is restricted severely, and jute will be lacking. The mills can make blankets and duck and a few other products needed for military use, although at higher costs than they can be made by customary producers of these articles. Their machine shops are now making certain much-needed military equipment. There is also some difficulty to be expected in providing fulling equipment for blanket production. Nevertheless, the industry is to attempt conversion of the greater part of its facilities to the war effort.

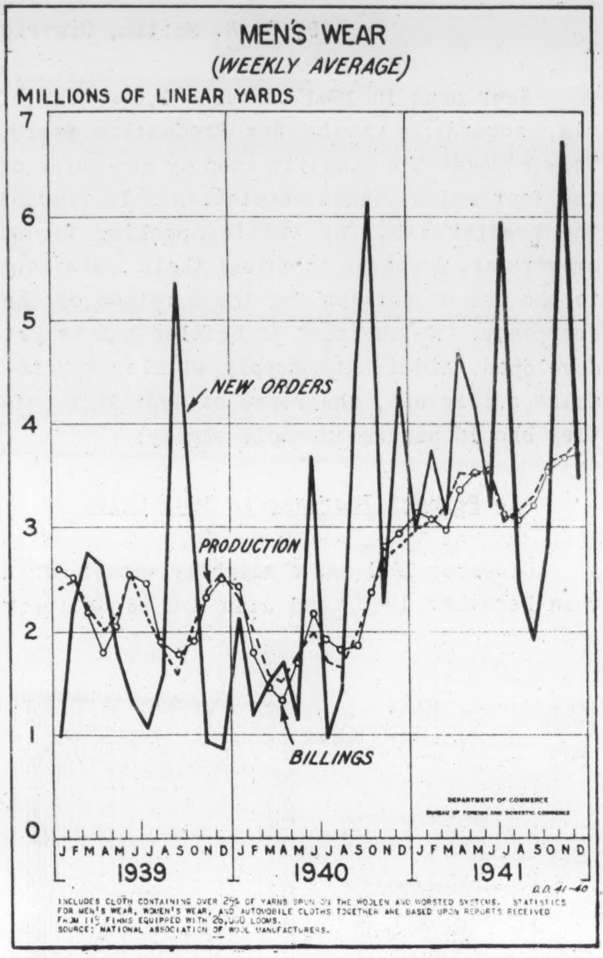
Apparel Fabrics

Military orders fall primarily in the group of men's-wear fabrics and have accounted for increasingly large proportions of such production. Concurrently, deliveries have been heavy for civilian fabrics, but these are expected to taper off within a short time. The year 1941 witnessed production and sales of civilian apparel on such a scale as to reduce stocks of cloth materially. Early months of 1942 witnessed a continuation of this consumer purchasing in an almost unprecedented volume.

Demand for fabrics for women's wear has improved greatly in recent months. Increased retail sales have stimulated the demands of cutters on manufacturers, expecially for spring business. Accumulated stocks at mills seemingly have moved to cutters or other holders, and additional orders are not being sought by most mills.

Wool Machinery Active

Wool machinery, except that for carpet manufacture, has been generally substantially more active than in the early months of 1941. It had been accepted that the operation of the wool conservation order, M-73, would reduce machinery activity early in 1942, but activity of machines as a whole has, to the present, held up better than expected.



INCLUDES CLOTH CONTAINING OVER 25% OF YARNS SPUN ON THE WOOLEN AND WORSTED SYSTEMS. STATISTICS FOR MEN'S WEAR, WOMEN'S WEAR, AND AUTOMOBILE CLOTHS TOGETHER ARE BASED UPON REPORTS RECEIVED FROM 119 FIRMS EQUIPPED WITH 26,000 LOOMS.
SOURCE: NATIONAL ASSOCIATION OF WOOL MANUFACTURERS.

Retail Sales of Apparel

January and February sales in most sections of the country, covering garments for men, women, and children, have been exceptionally heavy. This has resulted in reorders in volume, and retailers are reported to be experiencing difficulties in some instances in replenishing stocks.

By Buying Defense Savings Bonds and Stamps regularly you can help the Victory Program and, at the same time, help yourself and your family.

BEER SALES MAKE 10 PERCENT GAIN IN 1941

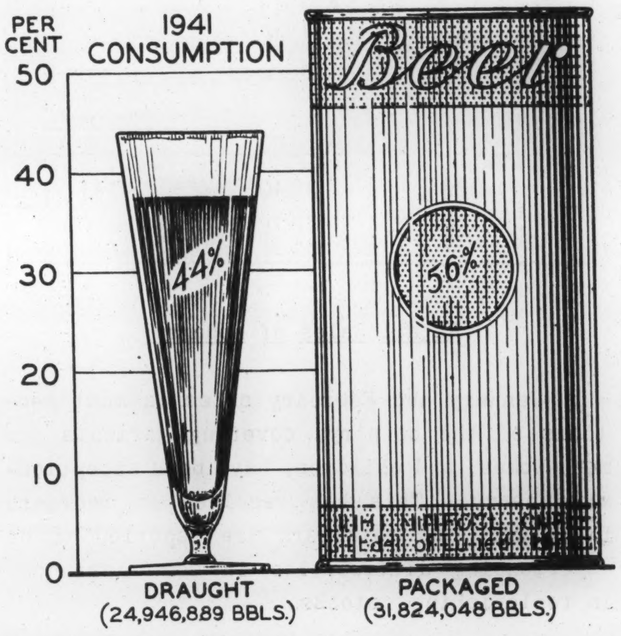
Tin Shortage Causes Return to Bottles

By C. W. Martin, District Manager, Charleston, S. C.

Beer cans in 1941 consumed 1,600 tons of tin, according to the War Production Board. This exceeds the quantity used by any three of the four major canned vegetables. In view of the greater need for tin for packing foods, brewers are prepared to adjust their operations to the use of bottles for the duration of the emergency. No shortage in bottles has as yet developed, and if the supply of closures remains sufficient, the reuse of available bottles should assure an ample supply.

10 Percent Increase in 1941 Sales

December 1941 was a slightly warmer month than December 1940, and also had 26 delivery days against 25 the previous year. These factors, together with the increased purchasing power of many industrial workers, caused beer sales for the month to exceed those for December 1940 by almost 20 percent.



Total tax-paid withdrawals during the calendar year 1941 amounted to 56,770,937 barrels, as compared with 51,637,164 barrels in 1940. This represents an increase of 5,133,773 barrels for the year 1941, or 9.9 percent. This increase of almost 10 percent places sales for 1941 slightly 1 million barrels above the highest previous year (1937) since relegalization of beer.

Increase Chiefly in Packaged Sales

Draft-beer sales for 1941 approximated the 1940 sales, showing a decrease of only a small fraction of 1 percent. All of the increase in total sales was represented in the packaged-beer category. Total packaged sales for the year were 31,824,048 barrels, as compared with 26,684,580 barrels for 1940, an increase of 5,139,468 barrels or 19.3 percent.

Considered by geographic divisions, production was up in all sections of the country. From a barrelage standpoint, the Middle Atlantic and the East North Central States showed increases for the year of over 2 million barrels each. The greatest increase in production from a percentage standpoint was in the East South Central States, which was 28.6 percent above the 1940 production.

Packaged sales were up in all divisions, the increases ranging from 8.2 percent in the Mountain States to 34.1 percent in the East South Central States.

Leading Consuming States Show Gains

Of the 10 leading States, all but one showed increases in their tax-paid withdrawals for the year 1941 as compared with the preceding year. Among the states showing increases in sales in 1941 as compared with 1940, together with their percentage gains, were Florida, 12.9; Georgia, 22.7; North Carolina, 15.8.

BASIC STOCKS A MAJOR PROBLEM OF PAPER INDUSTRY
Salvage Drives and Simplification Program May Be Solution

By F. H. Awalt and B. M. Frost

Heavy demand for paper and paperboard in 1942 and difficulties in the way of manufacturing the necessary pulp are expected to make the pulp-supply problem acute during the year. Production of paper and board may fall short of the maximum by 12 to 15 percent, owing to lack of basic stocks.

A plan for allocation of sulphite and sulphate pulps is being considered by the War Production Board in order that available supplies may be utilized most efficiently. The plan calls for classification of pulp needs under (a) direct war, (b) essential civilian, and (c) nonessential uses.

Factors Contributing to Short Pulp Supply

Several factors other than the greatly increased need for paper and paper products may contribute to pulp shortages. Of primary importance is the lack of sufficient labor in the woods. The season for heaviest logging operations is approaching; yet, in some areas, only 50 percent of the normal labor supply is available. One mill in New England has only 25 percent of its usual force in the woods. A similar condition in Canada may reduce United States pulpwood imports by 20 percent.

Of almost equal importance is the tire situation, which threatens delivery of logs to mills. Current rationing would not provide enough tires for pulpwood deliveries. This condition has been met in New England, northern New York, and the North Central States by granting tire priorities for a 3-month period to pulp mills in those areas.

Diversion will also contribute to pulp shortages. Bleached sulphite pulp for nitrating purposes increased from 100 tons a day to 300 tons a day during February.

Sulphite and Sulphate Pulps Reach High Levels

Production of sulphite pulp, both bleached and unbleached, reached high levels in 1941, but the gain over preceding years was not so great for the bleached as for the unbleached pulp. Total output of bleached sulphite was 1,703,000 tons, and of unbleached 1,178,000 tons.

Bleached sulphate production, like that of other pulps, reached record proportions in 1941. The year's total was 680,000 tons. Prospects for bleached sulphate in 1942 are not good, as chlorine supplies are expected to be increasingly short. Declines in bleached sulphate, however, will be compensated by corresponding increases in production of unbleached.

Production of kraft, or unbleached sulphate pulp, also reached a peak in 1941, at 3,720,000 tons. This output more than doubled the 1,639,000 tons produced in 1936. Since 1936 the yearly total has been steadily rising, and this trend is expected to continue through 1942.

Other Pulps Also Gain

Soda pulp output reached 592,000 tons in 1941, a gain of 73,000 tons over the 1940 production, and considerably above that of any other year since 1936.

Groundwood pulp production has risen steadily since 1938. The 1941 total was 1,850,000 tons. There are no indications that unused groundwood capacity is being utilized to make up for shortages in chemical pulps, but with any falling off in chemical pulp supplies, a further increase in groundwood pulp would seem likely in 1942, if the necessary pulpwood is available.

Salvage of Waste Paper and Other Stocks

An intensive drive is under way to bring collections of waste paper up to the 145,000 tons a week which must be attained if the goal of 7,500,000 tons for 1942 is reached. The aid of mayors in 20,000 cities throughout the country has been enlisted in order to salvage the maximum amount of waste. Collections at the beginning of January were running about 120,000 tons a week, or 25,000 tons short of minimum requirements. Reports from various centers since the new drive got under way are encouraging.

Maximum prices for waste paper in all parts of continental United States became effective February 5, with a new amendment to the Waste Paper Price Schedule announced by the Office of Price Administration.

The shortage of sulphite pulp available for paper making has revived interest in rags on the part of makers of fine papers. Consumption of rags in the manufacture of fine papers increased during 1941, and further increases are expected in 1942. One mill which produces fine paper has recently developed a method of utilizing hull shavings and waste from ginning, carding, and other cotton-cleaning operations.

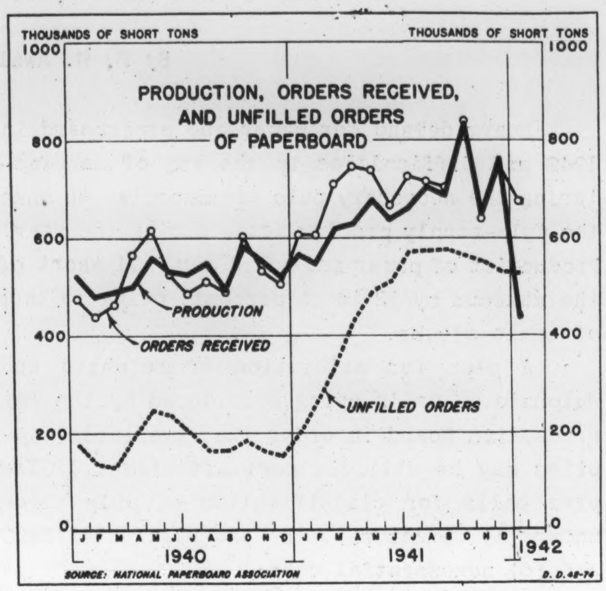
Less Chlorine Available in 1942

Chlorine, the use of which has been successively reduced in the pulp and paper industry during the past year, will be entirely eliminated in 1942 except for a few grades where whiteness and brightness is deemed indispensable. One of the grades excepted is photographic paper. Book and writing papers are not exempt, and can be expected to take on more the appearance of newsprint. Actual effects will not become apparent for a few weeks while old stocks of bright papers are used up.

Paperboard Industry Loses Skilled Workers

January operations in paperboard mills reached record proportions. The production ratio during the month was 102 percent, as compared with 93 percent in December and a 1941 monthly average of 88 percent.

A shortage of skilled employees in the paperboard industry has been noted. Some companies are already taking steps to retrain older employees to fit them for key jobs and to enable them to fill vacancies arising from the enlistment of younger employees in the armed forces and from resignations by workers who are accepting jobs with other industries.



SOURCE: NATIONAL PAPERBOARD ASSOCIATION

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Newsprint Output Fairly Regular

Annual production of newsprint has been fairly regular since 1936. The total output in North America did not, like other papers, reach a peak in 1941, in spite of war conditions. In former years, such conditions increased the publication of newspapers; but the wide use of the radio, with frequent news reports, has eliminated the need of heavy coverage and frequent extras.

Increased Demand for Wrapping Papers

Wrapping-paper production has varied within fairly narrow limits for several years, although the peak occurred in 1941, with a total of 2,213,000 tons. Demand will probably increase in 1942 in line with the heavy requirements added by war measures. Production will likewise be greater, with more kraft pulp available as savings are made through simplification and standardization of wrapping-paper grades.

Fine and Printing Papers

Annual production of fine papers has been fairly steadily upward during the past few years, to reach a peak of 623,000 tons in

1941. Utilization of the new method of cleaning cotton waste for pulping may permit a greater volume of fine-paper production in 1942.

Annual production of printing papers increased to a record high of 2,195,000 tons in 1941, and 1942 will probably see an even greater output.

The long-awaited simplification plan for printing papers has finally been released by the War Production Board. A total of 10,178 items was reduced to 2,549, and the number of grades from 82 to 52. Adoption of the proposed plan is expected to save approximately 175,000 tons of pulp yearly without sacrifice of printing surface.

OILS IN A TROUBLED WORLD

By Charles E. Lund

Much has been said of the efficacy of pouring oil on troubled waters; and long centuries have kept alive the story of the good Samaritan who, finding the stranger by the wayside, poured oil and wine into his wounds to ease his pain. But today, aside from being basic foodstuffs and the raw materials for many peacetime industries, oils and fats are among the essential products which are being turned more and more into the channels of war.

The United States is a much larger producer of fats and oils than any other combatant in the present World War; but our standard of living has absorbed most of this production plus substantial imports. With no incentive to conserve supplies, we have wasted large amounts of these products that would be utilized in other countries. Fats and oils, however, are vital products, and an adequate supply is necessary in any nation's war effort.

Consumption Reaches All-Time Record

In 1941 the United States consumed 11 billion pounds of fats and oils, an all-time record for this or any other country. The previous record, in 1940, was 9.7 billion pounds. We imported 2 billion pounds last year, principally of types not adaptable to our soil and climate. Our exports consist chiefly of lard, which is normally produced on a surplus basis for export market.

More animal fat is being produced daily, and an increase of at least 1½ billion pounds of fats and oils is provided for in the farm program for the 1942-43 crop year. There are large supplies in South America for which the United States is the logical and perhaps the only remaining market. However, the billion pounds formerly received from the Far East should be largely eliminated from our calculations for the current year.

Demand Will Increase in 1942

England, dependent upon imports, has been receiving large quantities of lard from the United States. With Far Eastern vegetable oils curtailed and Australian butter a doubtful item, England will probably need alternate supplies.

The United States faces a deficit of oils yielding a high percentage of glycerin. These oils were formerly imported from the Far East. To produce the glycerin needed for war material by this country and the Allied Nations in 1942, it will be necessary either to divert the surplus domestic edible fats and oils to this purpose or to import any available supplies from accessible areas, even though such oils may be of lower glycerin content.

Record Production Planned

Surplus flaxseed in Argentina over and above the amount allocated to the United States for paint purposes, would provide considerable assistance.

Hogs are being raised to heavier weights to produce more lard, and the meat industry has been asked to trim more fat in their operations. If possible, lard should be shipped to Colombia and Venezuela, which are depleting Brazil's babassu-kernel supplies to produce shortenings formerly made from coconut and copra, now cut off from the Pacific area. These babassu kernels would be helpful in the United States to produce glycerin and soap.

A movement has been started to collect household grease now entirely wasted. Fats are being diverted by the Government to essential industries. Farmers are encouraged, with Federal assistance, to produce in the coming season the greatest supply of raw materials for fats and oils in our history.

Cottonseed and Soybean Oils

An active demand for edible cottonseed oil is absorbing supplies from last year's short cottonseed crop, hence the carry-over to the new season beginning July 31 will be the lightest in years. Imports, principally from Brazil, are arriving at an increasing rate on the currently favorable market.

Rainy weather delayed harvesting of the 1941 soybean crop, probably more than half of which remained on January 1, 1942, to be marketed. Two-thirds of the production was probably marked by February 17. Soybean production and crush in 1941 were the largest ever recorded. An unusually large amount is being crushed in the first quarter of 1942.

The present capacity of soybean mills is about 96 million bushels. This can conceivably be increased by operating longer hours to crush the 125 million bushels expected from the new crop. Any slack can be readily taken up by cottonseed mills, which usually operate at less than 50 percent of capacity.

Changed Position on Soybean Supplies

The United States position on soybean supplies has radically changed since World War I, when domestic production was negligible. Imports of the oil reached 336 million pounds in 1918; imports now are negligible. It was not until 1935 that a domestic soybean crop started a substantial oil production, which now far exceeds former peak imports, and is second only to that of China (including Manchuria).

Soybean oil is an extremely versatile product, available for use in many industries. Processing refinements have so developed this oil that it now holds second place among edible vegetable oils produced in the United States. In edible preference it is outclassed by peanut and cottonseed oils.

The bulk of the soybean oil moves to the South for the cheaper shortenings sold in that section, while most of the higher priced shortenings, composed principally of cottonseed and peanut oils, are marketed in the North. Short supplies of cottonseed, however, are turning an increasing percentage of the cheaper and more plentiful soybean oil to shortening manufacture.

Soybean Oil Increasingly Important

Large quantities of soybean oil are also being processed for combining with dehydrated castor oil to form a tung-oil substitute. The impending shortage of coconut oil has diverted an increasing percentage of soybean oil into potash soaps. A soybean-meal movement is now reported, extending from the Illinois area to the West Coast. It replaces copra meal, curtailed by the war, as the protein feed for dairy cattle in that area.

The adaptable soybean has assumed a major role in our wartime needs for expanded production of fats and oils.

Drying Oils

Linseed oil supplied some 817 million pounds of the total 1,092 million pounds of fats and oils used last year in the drying-oil field (paint, varnish, linoleum, core oils). The crush and production of linseed oil during the last quarter of 1941 was the largest on record. This was also true of the calendar year compared with previous years. Imports — mainly from Argentina — at 21 million bushels, were nearly double the 1940 receipts from abroad.

Short supplies decreased tung-oil consumption to 65 million pounds. Increased replacement of tung oil with dehydrated castor oil is shown by the use of 74 million pounds of castor oil in drying industries. About 45 million pounds of fish oil also entered the drying-oil field. Oiticica oil (a counterpart to tung oil) was imported from Brazil to a total of 37 million pounds, which was three times the 1940 imports.

Civilian demand for quick-drying oils will be reduced, however, by curtailment in production of durable consumer goods for which enamels and varnishes are essential as a protective covering.

Soap Oils

Some 2.4 billion pounds of oils and fats were used in the manufacture of soap and glycerin last year. It is in this group that the war with Japan has created a definite shortage.

The billion pounds of coconut oil (including oil from copra and palm oil imported in 1941 from the Philippines and the Netherlands Indies were used principally in soap manufacture. In the process of making this soap, 195 million pounds of glycerin were produced, about half of which came from coconut and palm oils. Lacking these oils, it is obvious that oils and fats normally used in other fields should be diverted for this purpose.

Glycerin Supplies to Be Conserved

A War Production Board Order, effective April 1, will operate to conserve the supply of high-glycerin-yielding vegetable oils by excluding them from edible and other non-glycerin-producing uses. Coconut oil, babassu oil, and other oils yielding a high percentage of glycerin are covered in this order.

Soap manufacturers will be required to obtain full recovery of glycerin, and will be required to discontinue soap types in which the glycerin is retained. The WPB order also sets aside 20 percent of all stocks of these oils, so that oils with high lauric-acid content will be available for irreplaceable uses, such as synthetic rubber.

ANOTHER WAY TO COOPERATE

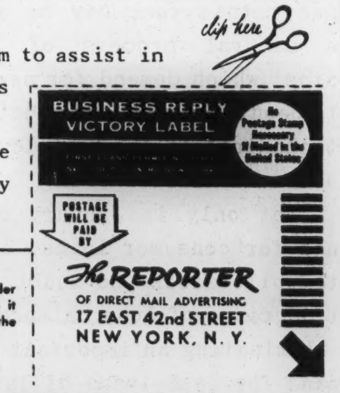
Don't throw away your antifreeze mixture this Spring, Bottle it until next fall when you will need it. The chemicals used in making antifreeze compounds are needed to make high explosives and for use in airplanes and tanks. Hence the war effort may be aided, cars protected next year and a savings in expenditures can be effected by car owners who are farsighted. If your car is drained at a filling station it would be most helpful if the container for the antifreeze compound is taken along at the time.

BUSINESS REPLY FORM CONSERVES PAPER

The Reporter of Direct Mail Advertising has devised a miniature form to assist in the conservation of paper which should lessen the need for restrictions in the business-reply system.

This Victory Label can be used in lieu of a postage stamp when the writer desires to pay the return postage for a reply. The form used by The Reporter is illustrated. Stickers may be substituted for labels.

This VICTORY LABEL can be used instead of a postage stamp when you reply to us. We use this new, approved form in order to cooperate with the Government in saving paper for War needs. When you write us, clip label at dotted line and paste it securely to lower right corner of your envelope. No postage or addressing necessary. We pay the postage gladly for the privilege of hearing from you.



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BUSINESS REPLY
VICTORY LABEL

No Postage Stamp Necessary If Mailed in the United States

POSTAGE WILL BE PAID BY

The REPORTER
OF DIRECT MAIL ADVERTISING
17 EAST 42nd STREET
NEW YORK, N. Y.

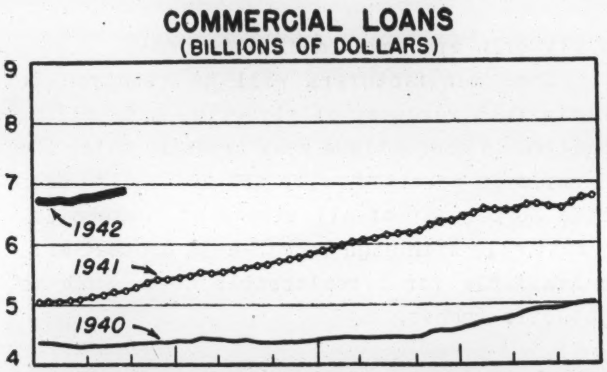
KEEPING ABREAST OF YOUR GOVERNMENT

TRENDS IN COMMERCE AND INDUSTRY

Drop in Consumer Loans

A decline of $25,400,000 was recorded during January 1942 in the total of consumer installment loans held by personal-finance companies, credit unions and industrial banking companies. This large excess of loan repayments in January over loans made during the month, reduced the combined loan outstandings of the three groups of consumer-loan agencies to $1,021,500,000 on January 31.

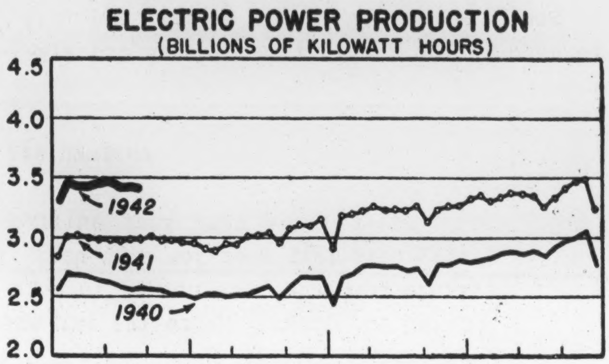
January end-of-month balances were down 2.4 percent from loan outstandings of $1,046,900,000 on December 31, 1941. In the same period 12 months before, consumer installment loans held by the three agencies dropped only $2,500,000 from December to January, for a decline of less than one-half of 1 percent.



The unusual slump in loan balances during January this year may be ascribed mainly to the natural process of loan liquidation, against which demand for new cash advances has not been adequate to sustain consumer-loan outstandings at the high levels reached during the second half of 1941.

Not only is January ordinarily a slack month for consumer loans, but freezing of new automobile stocks no doubt contributed to the net decrease of loan balances during the month by eliminating an important source of consumer demand for cash loans of large amounts.

There is the additional possibility that January loan demand this year may have been undercut further by consumer borrowing which accompanied the widespread anticipatory retail buying of earlier months.



Credit Unions

Credit-union installment-loan balances revealed a decline of $12,000,000 during January 1942, leaving the end-of-month outstandings 5.7 percent below the figure at the close of December 1941. Both State and Federal-chartered credit unions reported about the same percentage decrease in loan balances. A year ago, State-chartered credit-union loan outstandings declined no more than $800,000 in January, while the loan balances of the Federal-chartered credit unions were off $400,000 to give a combined decrease of $1,200,000, or only 0.6 percent. Total consumer loans held by credit unions on January 31, 1942, were $199,400,000.

Industrial Banks

Industrial-bank consumer-loan balances of $290,500,000 at the end of January were down $7,100,000 from December. This decrease of 2.4 percent contrasts with small gains in outstandings during the same month of both 1941 and 1940. A similar dollar decrease of $6,300,000 in January this year was shown in the loan balances held by personal-finance-companies. However, this was a drop of only 1.2 percent in the personal-finance company consumer-loan balances, which closed January with a total of $531,600,000 outstandings. From December to January a year ago, the personal-finance company outstandings were off $1,900,000, or a decline of less than 0.4 percent.

Personal-Finance Companies

January loan volume of the personal-finance companies (including loan renewals) was 36.3 percent under volume for December, which was almost the same as the drop of 36.6 percent a year ago. Credit-union and industrial-banking-company loans revealed declines from December 1941 to January 1942 of 28.4 percent and 11.4 percent, respectively. Smaller December-January loan volume declines in 1941 were 13 percent for credit unions and 8 percent for the industrial banks.

Comparing loan volume in January 1942 with the figures for January 1941, the personal-finance companies show a decrease this year of only 3.2 percent. The industrial-banking-company January loans were off 11.0 percent from last year, and the credit-union loans were down 29 percent in January 1942 compared with volume for January 1941.

Retail Installment Credit

Furniture Stores. — Installment accounts receivable held by furniture stores declined 4.5 percent during January 1942, as compared with the smaller December-January drop of 3.2 percent a year ago. The furniture-store installment-account index of the Department of Commerce was 105.1 at the close of January this year, indicating that receivables were only 1.9 percent higher than the figure at the end of January 1941, when the index stood at 103.1. December end-of-month installment receivables were 3.3 percent above receivables 12 months before.

Furniture-store installment-account collections during January 1942 were 12 percent of balances outstanding at beginning of month, a gain from the ratio of 11.4 percent for December 1941. A year ago, the substantially lower ratios showed the same degree of change, advancing from 9.6 percent for December 1940 to 10.1 percent for January 1941.

Household-Appliance Stores.— The Commerce Department's index of household-appliance-store installment accounts was off from 110.1 for December to 103.2 at the close of January 1942, representing a 6.3-percent decrease in these accounts held by reporting stores. The year before, the decline from December to January was only 3.7 percent. Household-appliance-store installment accounts at the end of January 1942 were no more than 1 percent higher than the figure for January 1941. This was a drop from December 1941, when the accounts were 3.8 percent above December 1940.

January installment collections were 11.1 percent of accounts held by household-appliance stores at first of month, as compared with the 11.7 percent December ratio. A similar decline occurred a year ago, when the ratio was off from 10.6 percent in December 1940 to 10 percent for January 1941.

Jewelry Stores.— Jewelry-store installment-account balances dropped 9.8 percent from the end of December 1941 to January 31, 1942. This characteristic January decrease was slightly above the 9.3-percent decline last year. Installment accounts held by jewelry stores in December 1941 were 8.8 percent above the figure for accounts 12 months before, but this gain was decreased to 8.2 percent in January 1942 over January 1941.

The jewelry-store installment-collection ratio was down sharply from 23.2 percent in December to 18.9 percent for January 1942. There was a slightly larger decline a year go, when the ratio was off from 18.5 percent to 14.5 percent in the December-January period.

Mineral Industries

Contracting concerns in the United States performing services closely related to the production of minerals or to the development of mineral properties reported a total of $4,488,000 received or due for work done during 1939, according to the Bureau of the Census. Statistics covering activities of general contractors engaged in work for the mineral industries were reported to the Bureau of the Census for the first time in the 1939 survey.

OTHER FEDERAL RELEASES OF INTEREST

War Production Jobs Have Preference

Workers registering at local public-employment offices in areas having an undersupply of labor are being referred to war production jobs before requests are filled for workers in civilian production, according to a recent announcement by the Federal Security Administrator.

Exceptions to this policy may be made in particular cases when such exceptions will promote war production, and instructions for special preferences will be issued to local offices of the United States Employment Service when necessary, as for skilled workers at Army and Navy civilian establishments outside continental United States.

Gain in Qualified Workers

The Social Security Board reports a sharp gain during January in the number of workers qualified for jobs in some 600 important war-production occupations and available for placement through the United States Employment Service offices. Many are workers recently laid off by automobile plants and other industries which produce consumer goods.

Although the aircraft, shipbuilding, and machine-shop occupations, in which shortages have been widespread for some time, shared in this increase, the number of available workers still fell short of expected demands. It is believed that the training of inexperienced workers or of those with related skills will continue to be the most important means of meeting the demand for workers in these trades.

Airport Investments and Operations

A completed survey of airport investments and operations for 1939 and preliminary data on the 1940 survey have been issued by the Civil Aeronautics Administration. The 1939 survey covered approximately 90 percent of the active civil airports in continental United States. Of the $20,956,501 spent on these airports, $11,342,456 was contributed by the various Federal agencies interested in airport work, especially the WPA.

Airport Investment and Operations Survey for 1940 1/

Item	Amount	Percent increase over 1939
Number of airports reporting..........	1,938	6.8
Land purchased or donated............	2,782,025	201.2
Capital improvements.................	22,202,161	10.8
Maintenance and operations costs......	2/6,196,728	33.7
Owners' income.......................	3/3,339,338	22.3
Other income from use of airport......	3/34,060,874	88.8

1/ Preliminary figures. Final tabulations are in process of preparation and should be available within the next few months. The data presented above do not include LaGuardia field and a few other of the larger fields.

2/ Does not include interest charges.

3/ Gross income.

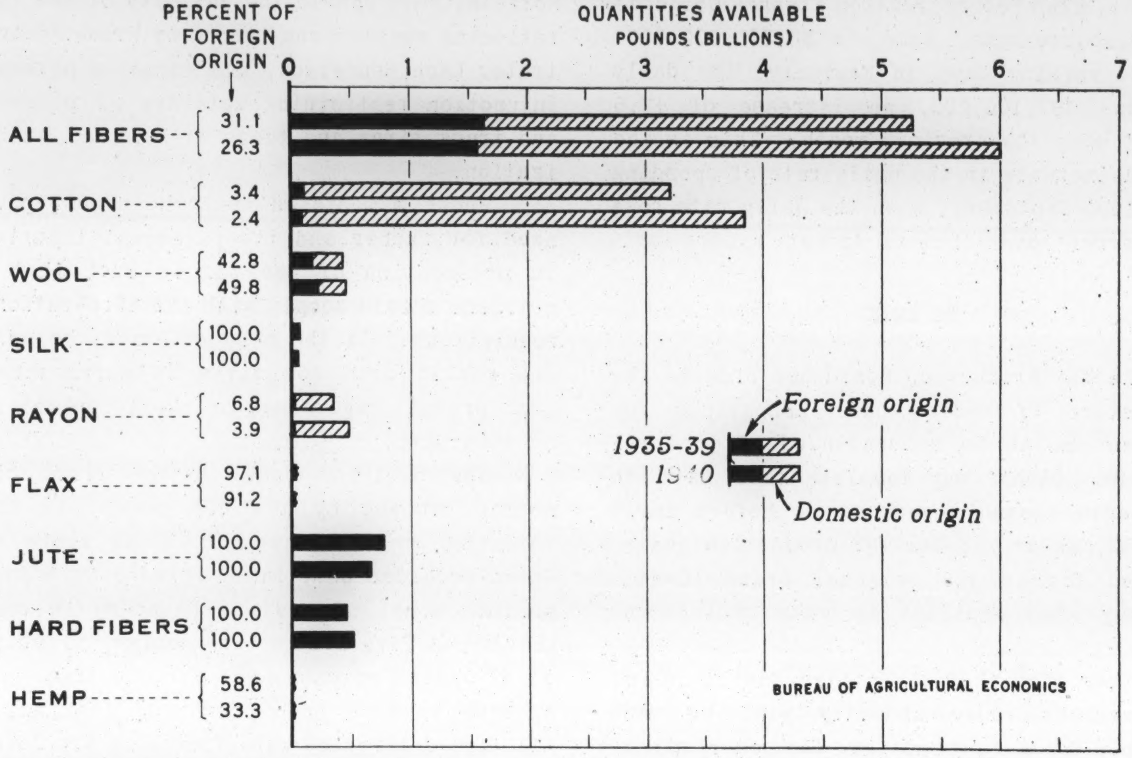
Every Soldier Armed With Sulfanilamide

Every American soldier who goes into a combat area is equipped with a package of sulfanilamide tablets that may sometime spell the difference between life and death, according to a report by the War Department.

Twelve sulfanilamide tablets in a special spill-proof metal box, constituting an initial dose of the most effective chemical agent to prevent infection known to modern medical science, are a standard addition to the first-aid equipment of all troops going into a combat area.

Personnel of each unit to which the drug is issued receives instructions as to its proper use from the attached medical officer. Careful checks are made periodically to verify its possession by each soldier.

FIBERS (DOMESTIC AND FOREIGN) AVAILABLE TO ULTIMATE CONSUMERS OF THE UNITED STATES, AVERAGE 1935-39 AND 1940



BUREAU OF AGRICULTURAL ECONOMICS

"V-Mail" for Victory

In an effort to further expedite delivery of mail to soldiers in the field, the War Department is perfecting a plan whereby letters will be photographed on motion-picture film--to be known as "V-mail," for Victory.

As a morale agency, delivery of mail to troops is second only to food, in the opinion of the War Department. At the present time, mail goes to the troops on ration trains.

Under the new plan, soon to be in operation, several hundred letters will be photographed on a small roll of film. These rolls will then be flown to or from a base, and enlarged photostatic copies will be made from the film. In this way valuable cargo space will be saved by the elimination of bulk mail and faster and safer transportation insured.

New High for Domestic Cotton-Mill Consumption

Stimulated by heavy military requirements, increased civilian demand for textiles, and limited supplies of goods produced from other fibers, the daily rate of domestic cotton-mill consumption reached a new record high of almost 44,000 bales. This was slightly above the previous high of last November and 12 percent above that of January 1941.

Except for the difficulty in obtaining labor, mill operations probably would have been at a still higher level. In spite of this difficulty, however, cotton consumption is expected to reach a substantially higher rate in the near future.

OTHER ITEMS OF NATIONAL DEFENSE

$100 Million a Day

The daily rate of expenditures for the war effort in February neared the $100-million-a-day mark. The February increase in the rate of spending indicates an accelerated tempo in the war production effort.

Treasury Department checks paid for war purposes, plus Reconstruction Finance Corporation disbursements, came to $2,330,000,000. With 24 working days in February, the daily rate was $97,100,000, an increase of 17.6 percent over the previous month. This is the highest increase in the daily rate of spending since last September, when the daily rate rose 24.5 percent over that of August.

No More

The War Production Board has ordered the manufacture of radios and phonographs for civilian use to be discontinued after April 22, 1942. Plants may complete sets on which they begin assembly work on or before April 22, 1942, under the limited production quotas provided for in the original order (L-44). They may also continue to make replacement parts.

Other than that the entire facilities of the American radio industry will be made available for war production. The order stipulates that no manufacturer shall use more than $500 worth of parts and materials ordered after February 11, 1942. However, it does not impose any limitation on the purchase of wooden cabinets. The $500 ceiling on orders is to permit the purchase of a limited quantity of incidental items to complete production by April 22.

The order (L-44-a) affects companies manufacturing home receiving sets who in 1941 employed approximately 30,000 persons, produced more than 13,000,000 sets, and did a business of approximately $240,000,000. In the manufacture of these sets for civilian use the following amounts of critical materials were used: 2,100 tons of aluminum, 10,500 tons of copper, 280 tons of nickel, and 70,000 tons of steel.

Judge Upholds Tire Regulations

Federal District Judge Luther B. Way, of Norfolk, Va., upheld the validity of the tire-rationing regulations issued by Price Administrator Leon Henderson, and issued a permanent injunction restraining delivery of passenger and truck tires and tubes without OPA authorization.

Judge May stated that the urgent public need for rubber and its paramount importance in prosecution of the war is such that all citizens should comply with the tire-rationing regulations. In the case at issue, he added, the public need for tires is paramount and must prevail regardless of the technical fact of ownership.

The decision came in the first civil action brought by the OPA under its tire-rationing regulations. The case arose when Smith-Douglass Co., Inc., filed a suit in the Norfolk Court of Law and Chancery to compel the Joynes Tire Co., a tire dealer, to deliver $1,427 worth of passenger-car and truck tires alleged to have been purchased last August. All tire deliveries were frozen by the Government on December 11, and, subsequently, rationing regulations were put into effect prohibiting transfers of tires without eligibility certificates issued by OPA local rationing boards.

"Inflationary and Unfair"

A peremptory request that wholesale and retail domestic mechanical refrigerator prices be restored immediately to the level of February 2 was made by Price Administrator Leon Henderson in a telegram directed at distributors, dealers, and retail outlets.

Note.—Readers desiring more detailed information on items given in this section may write to the Division of Information, Office for Emergency Management, Room 5525, New Social Security Building, Washington, D. C.

The telegram charged that "inflationary and unfair" price increases had occurred on a nation-wide scale since the War Production Board froze refrigerator stocks on February 14.

Pointing out that maximum prices which manufacturers can charge for domestic refrigerators were established by OPA on February 2, Mr. Henderson's message said: "I am requesting the immediate withdrawal of any retail or wholesale increases on domestic mechanical refrigerators which have been made since February 2, the immediate reestablishment of wholesale prices in effect on February 2, and the withdrawal of any retail prices which are above the suggested retail prices shown on manufacturers' price lists."

Cans for Vegetables

The War Production Board has modified Conservation Order M-81 to permit the manufacture and sale of cans necessary for the packing of certain "secondary product" vegetables which were planted before February 11, and for which a canner had contracted by that date.

Provisions of the order which place quantity limitations on the packing of such vegetables have been lifted until May 31 in order to reduce spoilage.

Cans packed in excess of a canner's tin-plate quota, or by a canner who has no applicable quota under M-81, must be retailed subject to disposition by the Director of Industry Operations.

Vegetables affected by the new ruling--beets, carrots, spinach, and okra—are included in table II of the M-81 order.

Athletic Equipment

Manufacturers of athletic equipment for which crude rubber or latex is no longer available are now experimenting with reclaimed rubber.

At the present time, there are no restrictions on the use of reclaimed rubber, but there is no assurance that it will continue to be available if the war program itself necessitates some form of control over reclaimed rubber.

If athletic equipment makers continue to have access to reclaimed supplies, however, it is possible that tennis players won't have to store away their racquets this summer.

Several manufacturers of tennis balls have developed an all-reclaimed ball, which, though not so lively as a ball made with new rubber, would be fully serviceable to the average player. The balls made of reclaimed rubber can last as long as ordinary ones, since wearing quality depends almost entirely on the felt.

The WPB Rubber Branch also reports that progress has been made in developing an all-reclaimed rubber core for baseballs, and squash balls using reclaimed. No solution has yet been found to the golf-ball problem.

Manganese Production

A vast manganese production program from low-grade domestic ores was announced recently by William L. Batt, Director of Materials. Seven small projects and three large ones have been recommended for Federal financing to produce this vital steel, Mr. Batt said.

The importance of manganese is readily apparent in the fact that an average of 14 pounds of it are essential in the production of a long ton of steel.

The new plants, plus those already in operation, should produce well over 600,000 tons a year in high-grade manganese concentrates, as compared with 30,000 tons domestically produced in 1939 and 40,000 tons in 1940.

The United States never has been more than a negligible producer of manganese, because deposits in this country are low grade and present difficult engineering and technical problems in their recovery. This had made them far more costly than high-grade deposits in Africa, India, and Russia, from which the bulk of U. S. supplies have come.

The impetus of war and the threat of disruption of shipments from abroad, however have brought a successful culmination to many years of research for methods to recover manganese from domestic deposits.

ASSOCIATION HIGH LIGHTS

By C. J. Judkins

Salvage for Victory

Increased importance of the salvage industry has caused the recent organization of two divisional associations: National Cotton Waste Association, and the Metal Dealers Association. Each will act as a subsidiary of the National Association of Waste Material Dealers.

Organized in 1913, the NAWMD is sending more than 20,000 colored posters to leading firms in its campaign to facilitate collection of scrap metals. Each poster bears the caption "Defense Production Depends on You. Deliver More Now: Scrap Metals -- Scrap Iron -- Scrap Rubber -- Woolen Rags -- Waste Paper -- Cotton Rags."

The public is realizing that certain scrap metals are invaluable to war-material production. At times steel mills are shut down unless they have the proper quantity of both iron ore and steel scrap. Many States have set up "Salvage for Victory" committees.

The War Production Board and the NAWMD are cooperating in various States and national waste-material programs, assisted by such subsidiary associations as the Secondary Metal Institute, Waste Paper Institute, Associated Rag Industries, and the Scrap Rubber Institute, all of which use the headquarters office facilities of the NAWMD. WPB has already established price ceilings on some waste materials.

In addition to the above subsidiary associations, the association maintains three divisions: Foreign Trade, Woolen Rag Graders, and Scrap Iron. There are regional offices in Hammond, Ind.; St. Louis; San Francisco; Los Angeles; and Greensboro, N. C. (1109 Times Bldg., New York, N. Y.; Charles M. Haskins, Managing Director.)

Arbitration of Commercial Disputes

Another national association in the waste-material industry, but confined to one product, is the Institute of Scrap Iron and Steel. Organized in 1928, its coverage is defined as the "collection, preparation, and sale of ferrous scrap for domestic consumers and the export trade." A feature of its services is that all members must agree in advance to submit to arbitration all commercial disputes that may arise between them. The Institute reports that this has proved to be an effective instrument for maintaining industrial peace, in an industry characterized by countless transactions daily, in the normal conduct of business between the scrap dealers.

The ISIS, which endeavors to promote efficient classification of scrap metals, states: "Scrap iron equals, if not surpasses, iron ore as the principal raw material for America's leading basic industry (steel), since the change from the Bessemer process has been largely replaced by the open-hearth process."

The principal services of the institute include statistics, trade practices, governmental relations, and standardization. Associate membership is open to manufacturers of equipment and supples. (1626 K St., Washington, D. C.; Edwin C. Barringer, President.)

WPB Sets up 24 Industry Branches

A list of 24 chiefs of industry branches, announced by the War Production Board on March 9, includes a number of former directors and officials of trade associations. Among these is George Renard, long secretary of the National Association of Purchasing Agents, who now becomes Chief of the Printing and Publishing Branch of WPB.

The NAPA, formed in 1916, has a membership of approximately 6,000 purchasing experts of manufacturing companies, government agencies public utilities, and institutional buyers. It cooperates with the National Bureau of Standards of the Commerce Department and other government agencies in the work of its committees on governmental purchasing, statistics, standardization and simplification, business trends, and administrative problems. (11 Park Place, New York, N. Y.)

$1,000,000,000 of War Securities

"We will dispose of over $1,000,000,000 of Bonds and Stamps during 1942," is the pledge of retailer associations to the Federal Government. Final arrangements were decided upon recently at a conference of association representatives with the Treasury Department. The national associations plan, in cooperation with approximately 3,000 State and local associations, to distribute this great block of Federal securities through sales to retail-store owners, to retail executives and other store employees, and to the customers of stores.

Retail promotional plans are now being worked out. A constant advertising program will be maintained with special features for such days as April 6 (Army Day), April 19 (Paul Revere Day), May 17 ("I Am An American" Day), and June 14 (Flag Day). Posters will be made up in some cities to show the relationship between sales and various types of airplanes, tanks, Navy vessels, and other equipment.

Among the messages promising fullest cooperation were National Association of Retail Druggists (205 W. Wacker Drive, Chicago, Ill.) — "The druggists and pharmacists of America are a unit in pushing the sales of bonds and stamps to the millions who visit our stores daily"; National Retail Furniture Association (666 Lake Shore Drive, Chicago, Ill.) — "Our salesmen are Uncle Sam's salesmen, each seeking to impress his customers with the duty of becoming purchasers of Defense Savings Stamps and Bonds"; National Association of Retail Grocers (360 N. Michigan Ave., Chicago, Ill. — "It is a time to show the world that America is hard, not soft. We are willing to sacrifice and fight for the things we hold dear."

It was stated at the recent conference that approximately 1,000,000 retail stores are now selling and promoting the sale of these Federal War Securities. The success of sales campaigns in certain cities was analyzed.

In Chicago, each of 13 larger stores subscribed for $50,000 of these securities and arranged for special selling booths. In the city of Canton, Ohio, the drive was brought to the attention of everyone in the city through a demonstration arranged by the Canton Retail Merchants Board, representing all types of retailers. All business, labor, consumer, and fraternal organizations participated in a parade of 4,000 persons, and the resulting publicity greatly increased current sales.

It was reported that 6,000 hotels now have posters on display, arrangements for this having been made by the American Hotel Association (221 W. 57th St., New York, N. Y.) and affiliated State and local organizations. Restaurants and hotels, it was reported, have arranged for the inclusion of the song "Any Bonds Today?" in 300,000 music (juke) boxes.

Various associations of commercial artists announced that leading cartoonists throughout the country will frequently insert messages in their drawings advocating the sales of stamps and bonds.

To Avoid Mandatory Orders

What is the answer when 1942 war and civilian needs exceed production capacity? Some associations are adopting the method advocated by the Association of Cotton Textile Merchants of New York. Its War Activities Committee, in an endeavor to forestall possible mandatory allocation orders of WPB, states: "Approximately 1,200 cotton textile mills will be asked by their selling agents to allocate at least 50 percent of their production to contracts that bear approved preference ratings. To fulfill 1942 demands, great care must be used, and plant conversion will be necessary in many cases." (40 Worth St., New York, N. Y.; W. Ray Bell, President.)

NEW BUSINESS BOOKS AND REPORTS OF MERIT

By Edith S. Preiner

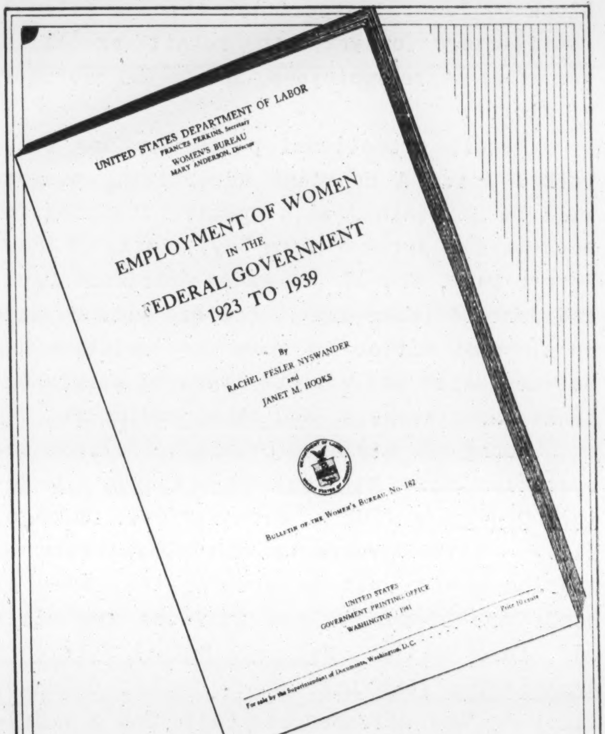
The following publications, added to the Department's research facilities through the courtesy of the authors and publishers, are listed as a service to businessmen.

GOVERNMENT PUBLICATIONS

SURVEY OF CURRENT BUSINESS — ANNUAL REVIEW NUMBER. U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce. (Feb. 1942. 102 pp. Price 15 cents; annual subscription, $2.) Presents an economic review for the year 1941, including data on national income, capital formation, commodity price movements, industrial and agricultural production and income, consumption, inventories, construction, public utilities, employment and working conditions, international trade and finance, Federal financial operations, bank developments, selected business indicators for specified years and percentage changes, and monthly business statistics. Numerous charts and tables.
Available from: Government Printing Office, Washington, D. C.

CENSUS OF BUSINESS: 1939. WHOLESALE TRADE — COMMODITY SALES. U. S. Department of Commerce, Bureau of the Census. (1942. 226 pp. 45 cents.) This report analyzes sales of various classes of wholesale establishments, by commodities or lines of merchandise, for the year 1939. Data are presented for the country as a whole, for geographic divisions, and for five cities: New York City, Chicago, Philadelphia, Boston, and San Francisco.
Available from: Government Printing Office, Washington, D. C.

CENSUS OF BUSINESS: 1939. RETAIL TRADE — ANALYSIS BY SALES SIZE. U. S. Department of Commerce, Bureau of the Census. (1941. 255 pp. 45 cents.) Covers operations of retail stores during calendar year 1939, presenting analysis of stores, sales, personnel, and pay roll, for kinds of business in seven size-groups, by States. Independent stores and chain units are analyzed separately. There is a further analysis of small independent stores (annual sales volume less than $10,000) in five size groups, and an analysis of large stores (annual volume more than $300,000) in three additional size groups.
Available from: Government Printing Office, Washington, D. C.


UNITED STATES DEPARTMENT OF LABOR
FRANCES PERKINS, Secretary
WOMEN'S BUREAU
MARY ANDERSON, Director

EMPLOYMENT OF WOMEN
IN THE
FEDERAL GOVERNMENT
1923 TO 1939

By
RACHEL FESLER NYSWANDER
and
JANET M. HOOKS

BULLETIN OF THE WOMEN'S BUREAU, No. 182

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1941

For sale by the Superintendent of Documents, Washington, D.C. - - - - - Price 10 cents

WOMEN IN THE FEDERAL GOVERNMENT, 1923-1939. U. S. Department of Labor, Women's Bureau. (1941. 60 pp. Bulletin 182. 10 cents.) Shows trend over recent years in employment of women in the Federal Service, and describes varied duties women are performing for the Government, both in the District of Columbia and throughout the United States. Data are

presented on salaries of women in various occupations. The last section describes briefly how to qualify for a civil service job. Appendix contains three summary tables and brief description of National Roster of Scientific and Specialized Personnel.
Available from: Government Printing Office, Washington, D. C.

PRIVATE PUBLICATIONS

Please Note: The Department has no copies of private publications for distribution and cannot be responsible for their content. For private publications write direct to the publishing agency given in each case.

MODERN GLASS PRACTICE. Dr. Samuel R. Scholes. (1941. 290 pp. Illus. $6.) Covers all phases of glass manufacturing -- the material, methods, and equipment. Used as a standard text for glass in American ceramic colleges, this book is written in a manner to make it of practical value to plant men in factories and to suppliers of equipment and materials to the glass industry, laboratories, and libraries. This edition, which has been completely revised and brought up-to-date, includes new material on convection currents and on some of the newest compositions and applications of glass.
Available from: Industrial Publications, Inc., 59 E. Van Buren St., Chicago, Ill.

HOUSE CONSTRUCTION DETAILS. Nelson L. Burbank. (1942. 313 pp. $3.). This compilation of construction details, photographic views of finished work, tables, and explanatory text is based upon modern American practice in the construction of residences and small miscellaneous buildings. The various sections are presented in construction sequence so as to constitute a working guide in detailing every step in the construction of a dwelling from foundation to finish. Suitable for either the school or the practical builder. Many new building materials developed within recent years are described and pictured in the volume.
Available from: Simmons-Boardman Publishing Corporation, 30 Church St., New York, N. Y.

HOW TO SELL MORE COSMETICS AND TOILETRIES. Fawcett Publications, Inc. (1942. 39 pp. 50 cents.) Presents a selling course covering the 18 major cosmetics and toiletries classifications; prepared to aid sales people increase sales.
Available from: Fawcett Publications, Inc., 1501 Broadway, New York, N. Y.

BETWEEN AUTOMATIC AND AUTHORITARIAN PRICE-MAKING. Edwin G. Nourse. (1942. 28 pp. 25 cents; 12 pamphlets, $2.50.) Chapter I of the forthcoming book, "Price-Making in a Democracy," which is being serialized in pamphlet form. A substantial part of the material which will be included in the book is contained in the 12 pamphlets to be issued one each month during 1942.
Available from: The Brookings Institution, 722 Jackson Place, Washington, D. C.

FREE ENTERPRISE AND LAISSEZ FAIRE. Edwin G. Nourse. (1942. 26 pp. 25 cents.) Chapter II of the forthcoming book, "Price-Making in a Democracy."
Available from: The Brookings Institution, 722 Jackson Place, Washington, D. C.

PACKAGING CATALOG, 1942. Packaging Catalog Corporation. (1942. 641 pp. 14th ed. $5.) Contains basic information on types of package used in modern commerce, including articles and properties charts on materials used in packaging; sections on packaging and production machinery--care, location in plant, and other production considerations. Treats exhaustively the subject of plastics in defense; contains many informative illustrations. Special sections are devoted to packaging design, covering the new trend toward simplification and containing; color photography; and important changes in laws affecting packaging. Pages are tabbed for ready reference. The index-directories section contains a buyers' directory, classified according to product; trade-name directory, with description of products and manufacturers' names; and alphabetical list of manufacturers and addresses.
Available from: Packaging Catalog Corporation, 122 E. 42d St., New York, N. Y.

DEPARTMENT OF COMMERCE
BUREAU OF FOREIGN AND DOMESTIC COMMERCE
WASHINGTON

OFFICIAL BUSINESS

RETURN AFTER FIVE DAYS

PENALTY FOR PRIVATE USE TO AVOID
PAYMENT OF POSTAGE, $300

THE CENSUS BUREAU
presents

Facts About Retail Business

COMMODITY SALES

Thirteen reports by kinds of business analyzing sales by commodities. The following eleven are available:

Apparel Group. 20 cents

Book Stores; News Dealers; Stationery Stores; Gift, Novelty, Souvenir Shops; Office, Store Appliance and Equipment Dealers; Office, Store, School Supply Dealers; Scientific, Medical Instrument and Supply Dealers. 10 cents

Drug Stores. 15 cents

Feed and Farm Supply Stores; Florists; Fuel, Ice, and Fuel-Oil Dealers. 15 cents

Filling Stations. 10 cents

Food Group and General Stores (with food). 20 cents

Furniture-Household-Radio Group. 15 cents

Grocery and Combination Stores. 15 cents

Jewelry Stores, Luggage Stores, Opticians, Photographic Supply and Camera Stores, Sporting Goods Stores, Bicycle Shops. 10 cents

Lumber-Building-Hardware Group. 10 cents

Motor-Vehicle Dealers (New); Accessory, Tire, Battery Dealers; Used-Car Dealers. 10 cents.

Please make checks and money orders payable to the *Superintendent of Documents, Washington, D. C.,* and mail requests only to that official.

Our newspaper clippings carry stories which run about as follows:

A woman is manager now of an automobile service station (there are many stories of girls as filling station attendants, in various parts of the country, and some companies are making it a national policy to use girls in this way.)

A woman buys all the steel for one of California' big shipyards.

Two women are resident doctors at a hospital, placed as internes - due to shortage of men.

The physical education teacher for boys in several junior high schools is now a woman.

A woman is president of a dry goods emporium; took her chief's place.

A woman is manager of a firm operating truck-tractors and semi-trailers - taking the place of her husband now in the army.

A woman recently became director of advertising functions of a large women's specialty store in New York City, taking a man's place.

A woman has replaced her husband as conductor of a morning radio "spot".

A woman has been hired as a barge captain because of man shortage.

Two women have replaced men engineers as master control-room operators in a radio station.

More than 55 classifications of jobs in banks are now being offered to women.

Foundry managed by woman makes for home-town hero to drop. The woman was Mrs. L. M. Cleaves-Byers, foundry manager and owner, Today she is one of the few of her sex in steel. She knows all about metallurgical formulae, pouring off moulds, tapping out cupolas and pattern making as result of 40 years in business. She began as a bookkeeper in 1901 after graduation from Michigan. Detroit News Pictorial, Sept. 6 1942.

Woman earns post high in exchange. Miss Mae E. Daly, first woman to hold titular executive rank in the New York Cotton Exchange. (Times, New York, Nov. 7, 1942)

Utility Head is appointed to Board of Education. Miss Mary E, Dillon of Brooklyn, president and board chairman of the Brooklyn Borough Gas Company, was maned by Mayor LaGuardia yesterday to succeed William R. Crowley of Brooklyn as a member of the Board of Education to serve until 1946. She is one of the few women to head a public utility company. She went to work for the company as a clerk in 1903 and later became general manager and vice-president. She is now serving as chairman of th Brooklyn Defense Office, a post to which she was appointed by Mayor LaGuardia. (N.Y.Times, Nov. 9, 1942)

Headlines methods in ads favored by new Director. Miss Elizabeth Flannery takes publicity post at Hengerers, explains views. A native of Detroit she was graduated from Wayne University and also attended the New York University School of Retailing. She served with the J. L. Hudson Company for five years, the Ernest Company for two years and then Russek's in Detroit, for five years. At Hengerer's she succeeds Gordon J. Weisbeck, who resigned to enter a war industry. (News, Buffalo,Sept 1,'42

Virginia Gates has been appointed director of advertising and sales promotion for Mary Dunhill, Inc., perfume and cosmetic house, it was announced yesterday by Arnold L. Ogden, president of the company. Miss Gates previously served as publicity director of Saks-Fifth Avenue and of Lennen and Mitchell, advertising agency, as well as foreign advertising manager of the Dorothy Gray division of Lehn and Link. (N.Y.Times, Dec. 10 , 1942)

Mary J. McClung has been appointed advertising director of the New York Post, succeeding Natt A. Getlin, who resigned. Miss McClung, who joined the newspaper's advertising department in 1937, was previously a member of the advertising staff of the New York World-Telegram and of the Pittsburgh Press. (N.Y.Times,Nov. 13, 1942)

Miss Margaretta Van Rensselaer Schuyler, manager of the furniture department of W. & J. Sloane, has resigned, it has been announced by David J. Brunn, general manager. She will become retail home-furnishings coordinator of Montgomery Ward & Co. Starting as a member of the decorating staff and later becoming manager of the fabric department, Miss Schuyler has been with the Sloane organization for the last eight years. Four years ago she was made furniture manager.(Sun, N.Y.C. Oct. 26, 19 1942)

Miss Davies, a graduate of Bucknell, was recently appointed advisor to Lieutenant Bre Brehon Sommerville , commander of Services of Supply, U. S. Army/ When women learned their place was in the factory, the shop, and the foundry, as well as in the home, numerous difficulties and questions popped up for plant managers who once thought operating a lathe, a screw-driver and a welding torch was strictly a man's game. So to unscramble such dilemmas, industrial executives - men and women both - gathered in Camden this week for a big conference on Women in Industry, sponsored by the Manufacturers Committee of Camden County and the National Assoc. of Manufacturers. Here are some of the experts - Ellen M. Davies, personnel manager, Chase Brass & Copper Co, Waterbury, Conn.; Constance Ekstrand, director of women personnel, Todd Hoboken Dry Dock, Inc., Hoboken, N.J.; (Bulletin, Phila. Pa. Jan.22' 1942)

Training

Extent of training of women in Ohio National Defense Training program

		Women	
Pre-employment	Total	Number	Percent
Cumulative, July 1, 1941--April 30, 1942	45,688	3977	8.7
On active file, April 30, 1942	11,054	1721	15.6
Supplementary			
Cumulative-July 1, 1941-April 30, 1942	18,401	243	1.3
On active file-April 30, 1942	5,567	161	3.0

Industry in general is working on the training of women wherever possible to offset the depletion of young men up to Feb.1942. No women could be referred to N.D.T. training classes unless there was relative assurance they could be employed. Up to this time there had been no women in the training classes in either Cleveland or Cincinnati. In the week ending March 28, 1942, the first group of 46 women were placed in the machine shop classes in N.D.T. training schools of Cleveland to receive 10 weeks training. Cincinnati was more backward than Cleveland in training women.

The Goodyear Aircraft plant has set up a large scale pre-employment training program for men and women.

Curtis Wright also has set up its own training school, where it trains most of its unskilled workers. It has a machine shop course and an aircraft riveting and sheet metal fabricating course, each six weeks in duration. In December 1941 women were first placed in this training school and in March there were nearly 300 in the sheet metal and fabricating classes. They are given same training as men. All women must be trained in this school prior to employment unless they have some exceptional skill or ability. Practically all the women now employed except for some inspectors and power machine operators have gone through this school.

A.F. N

WOMEN MAKE MAPS FOR AFRICA ARMY

Forces Landed With 110 Tons of Their Handiwork, Getting 400 Tons More Since

100,000 TURNED OUT DAILY

Service Also Provides Data for Other U. S. Expeditions—Capital Group Likes Job

Special to THE NEW YORK TIMES.

WASHINGTON, Feb. 13—When our expeditionary forces made their successful landings along the African Coast three months ago they carried as part of their baggage 110 tons of maps. Since these first assaults, 400 more tons of maps have been sent to them.

These maps, showing the topography of the areas, played an important part in the first landings and will provide tactical background for the drive which President Roosevelt promised in his speech tonight to push the Axis from its dwindling foothold on the African continent.

Most of the maps were prepared in Washington, and a great deal of the work entailed, from exacting photography to equally exacting drafting, was the work of women. The work is difficult.

As one woman in slacks said as she removed a completed map from a printing press in the Army's Map Service:

"It's easier than housework."

The women, newly hired by the Army to do men's work, prefer to "shoot" with some of the world's largest cameras in one of Washington's few "factory" atmospheres than quit the Map Service for jobs with higher pay.

"I am on my feet all day, but at the end I feel fresh as a daisy," remarked a former commercial photographer awaiting an exposure on a 40x40 film. She looked more like a model than an Army camera man, with the exception of her rubber gloves.

In the lithographic section a woman stood over a vat washing large metal sheets of map images. Part of her work was lifting ten-pound glass plates into "whirlers" for solution baths. Hers was a "right" kind of job, said this girl with both brother and fiancé overseas. Working with her hands was peculiarly satisfying, she added.

"Graves" characterize Russia; "mosques" Africa; and the whole world presents a difficult physical problem to military operations, the map-makers say as they draft coastlines and rivers. Scroll land elevations with "contour pens" sketch "legends" on foreign soils and piece together the photo-mosaic of air photography.

Washington headquarters of the Map Service produces nine-tenths of the Army's maps, 100,000 a day. About 90 per cent are made from maps in the service's library, continuously augmented by other military sources, by civilian libraries and universities, by large business enterprises, and by military attachés of friendly governments.

Over tables women retouch map negatives. Former waitresses and artists, now cartographers, bend over drafting desks with magnifying glasses, bone burnishers, pens, declaring that their eyes "never felt better." Other women air and stack map paper, catalogue the research library and map supply.

In a near-by corridor they often see rows and rows of wooden boxes, mailed, addressed and ready for shipment with corners and "E" stamp of Engineer Corps. The sight continually impresses them with the secrecy and strategic importance of their daily work. They know that the Army advances on its maps.

$20,000 for Child Refugees

The Pioneer Women's Organiza
tion, 275 Seventh Avenue, has se
$20,000 to the Working Wom
Council in Palestine for th
sorption of refugee childre
Iran into its institutions
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WOMEN REPLACE MEN IN SIGNAL INSPECTION

Corps Reports 40% of Units Composed of Them

Special to THE NEW YORK TIMES.

1944

WASHINGTON, April 16—No men qualified for military service, only women and physically handicapped men, are being employed in Army Signal Corps inspection units, the War Department said today.

"Use of women has been such a pronounced success that they now comprise 40 per cent of the inspection force," it was reported.

After the first group of women was assigned to this work in November, 1942, at a Chicago plant making receivers and generators for airplane beacons, several more units were organized. Now women "are forming the nucleus of inspection units in the five zones of the Signal Corps Inspection Agency."

The inspection job includes many phases, from the mechanical work on the assembly line to the final inspection of electrical equipment.

In shipyards, aircraft factories and munitions plants women are taking their places as fighters in the battle lines of production.

Talents developed in wartime are likely to create a new awareness of what women can do.

and Army find the Wrens and the Ats no less useful. But far more important is the fact that the manufacture of practically all war matériel in Great Britain is dependent on the performance of the women workers in the factories. Every one in Great Britain soberly admits this.

In Russia women work not alone behind the lines but side by side with the soldiers when it is necessary. They also repair railroad tracks, build bridges and keep transportation moving, working on jobs so utterly unfeminine as we have come to think of the word that it is difficult to believe that women like ourselves dare to undertake them. In Germany every woman's capacity for labor is measured as carefully as is that of every man. Countries in total war pit the strength and abilities of their women against the strength of the women of their enemies.

THE gravity and significance of this fact have not yet penetrated the whole American consciousness, though many individuals in positions of authority are well aware of what it will mean. But as the novelty of having women in unexpected places wears off, and the elements of drama and surprise yield to those of endurance and steady delivery, it will be more and more apparent every month that this is a war in which women are necessary and that it cannot be won without their help.

No patriotic woman, nor any woman's organization in this country, is willing to play upon that fact for personal or sex advantage. If it is a woman's war in a more literal sense than any war has ever been, it is not only because of woman's active participation but because the battle of the United Nations is against those forces in the world which oppose the mental development and free progress of women. The Axis powers do not believe that women are on a par with men, nor that they have any right to strive to overcome handicaps of training and education which at present keep them behind. If the United States were to lose this war and be at the mercy of its enemies, the women of this country would be a subject sex in a conquered nation, and there is no place in society lower than that.

Women of the United Nations are committed to this war, not to help out their men but to save themselves, to survive as individuals who have a right to personal dignity and a fair share in human progress. They know, as clearly as most men who fight know, that they will not come out of the war as they went into it. For war on this scale changes people because it changes the habits of human society.

For one thing, if women's participation in this war is pervasive enough and if the war is sufficiently prolonged, new standards of self-reliance are going to be set up for women. This will not be just because the men are off at the wars and women must live without them. Women will be producing and earning in the great war of production, and technical skill and earning capacity among women will become the norm, not the exception. The "finest little woman in the world" will no longer be the one who devotes herself to the care of her own house and family. She will have to do that and a great deal more, to be singled out for praise.

THE ideal woman from now on is going to be a new model. This will be true in England, in Russia, in China and in the occupied and conquered countries when they are reclaimed. The new capacities developed in wartime, the necessity for living without protection or privilege, the demand for talents and skills other than domestic ones are bound to create a new awareness among women of what is possible to them. This awareness will be shared by men, who will be newly expectant and critical of women.

To ignore this fact until the end of the war is stupid and even dangerous. For it could be so misconstrued as to make women's part in the war seem menacing not only to future employment but to their roles as wives and mothers. If we want to have an honest alliance between men and women as we fight this war, no such doubts should be allowed to rise. And if they do arise, there are facts enough already in evidence to destroy the doubts.

Take first the question of the effect of this new status on woman's attractiveness. A careful and close look at Great Britain shows that work either as a member of the auxiliary armed forces or as a factory hand does not make a girl or woman any less attractive. There is no lag in the desire to be attractive. It is not trivial to make a reassuring point of this, for the beauty and desirability of women are intricately involved with the reasons for life itself.

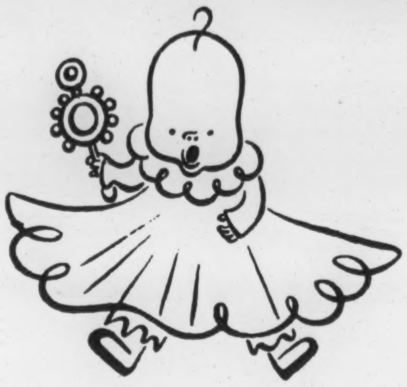
In this country booklets are already being distributed to our women workers telling them how to take care of themselves, to avoid backaches, tired eyes, muscular weariness. Clothes are being designed for the working woman's day, for her practical use in the evenings. Beauty and charm are not being scrapped nor even being laid aside for the duration.

Some conventions have already been scrapped on both sides of the Atlantic as escorts go off to war. But dignity and self-control have not gone by the board. Pretty girls work side by side with soldiers on gun sites and on the same bench with men workers in a factory, and those in authority will tell you that there is very little "funny business." Each of the executive heads of the Women's Services in Great Britain said the same thing.

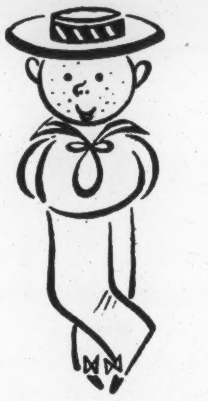
BRITAIN'S birth rate is significant, too. The calamity howlers here say that its rise in this country to a possible 20 per thousand will be followed by a sharp drop when the men go off to war. That has not happened in Great Britain. In spite of the fact that about 3,000,000 British soldiers are deployed all over the world, and that all British women between 20 and 45 are subject to government call and direction, the birth *(Continued on Page 37)*

A Short History of Winston Churchill

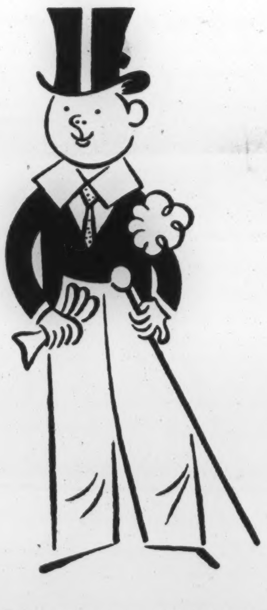
His 68th Birthday Occurs Tomorrow. It is Celebrated Here by Oscar Berger.



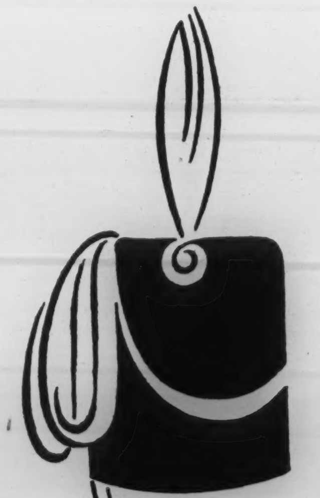
1. BABY WINSTON LEONARD SPENCER CHURCHILL (1874)



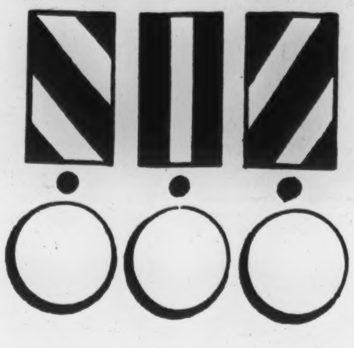
2. CHEEKY BRIGHT BOY AT SEVEN



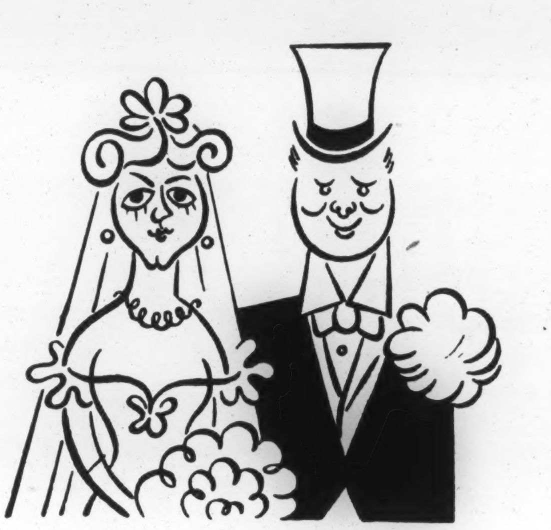
3. "JUNIUS JUNIOR" OF "THE HARROVIAN"



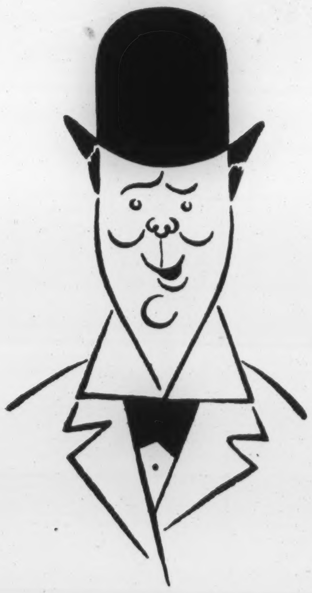
4. "THE QUEEN'S OWN HUSSAR" AT ALDERSHOT (1895)



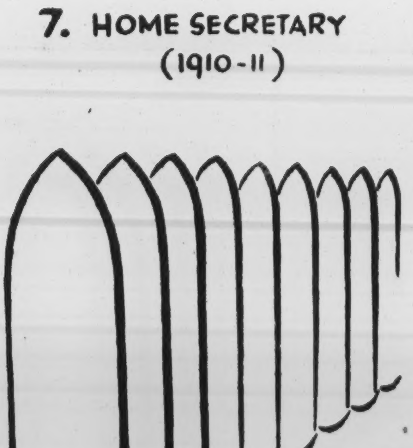
5. SAW ACTIVE SERVICE IN CUBA, INDIA, EGYPT AND SOUTH AFRICA (1895-1901)



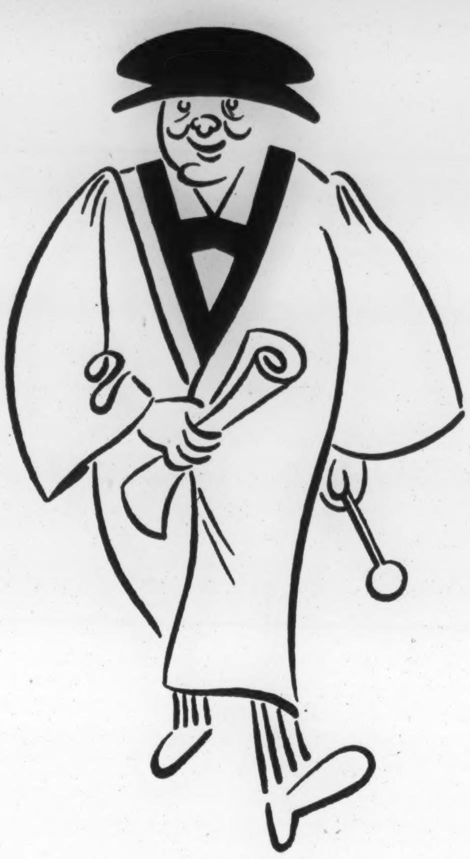
6. MARRIED MISS CLEMENTINE HOZIER (1908)



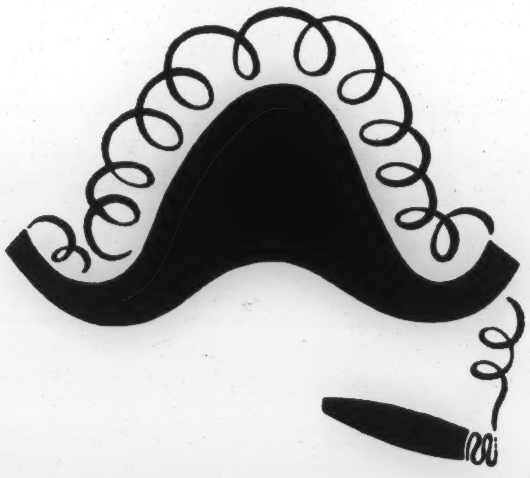
7. HOME SECRETARY (1910-11)



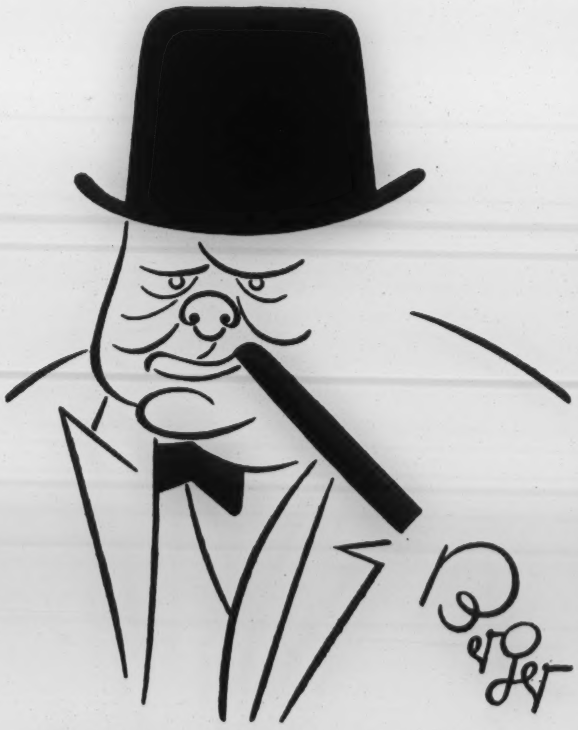
8. MINISTER OF MUNITIONS IN THE GREAT WAR



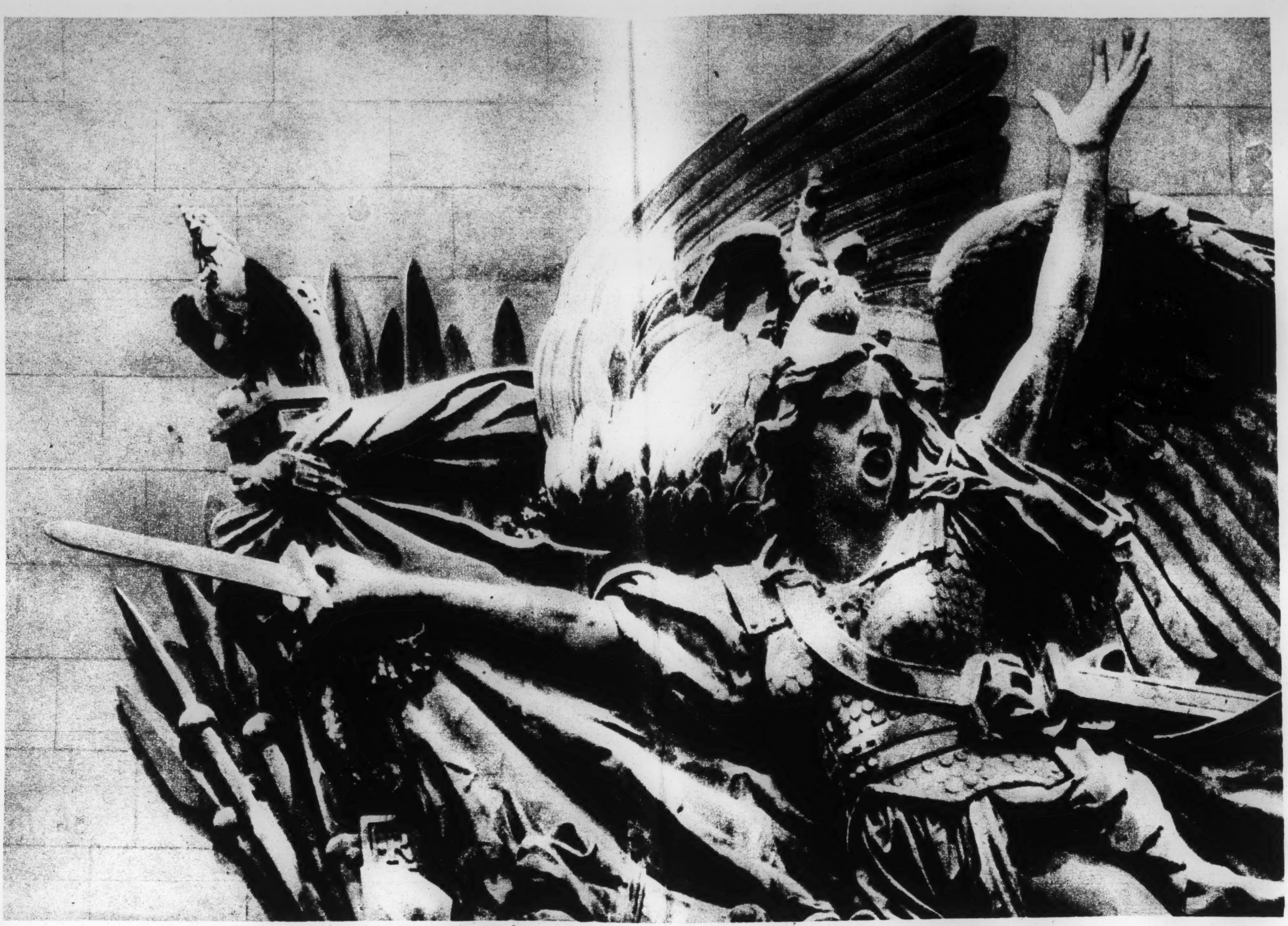
9. RECEIVED HONORARY DEGREE AT OXFORD (1925)



10. FIRST LORD OF THE ADMIRALTY (1911-15 AND 1939-40)



11. PRIME MINISTER SINCE MAY, 1940



Detail from "La Marseillaise," by Rude, on the Arc de Triomphe

"Men of France, let us be reconciled in order to serve!"

An Open Letter to Frenchmen Everywhere

A famous French aviator and author voices an appeal for a reunion of hearts and a return to the new battlefront in North Africa.

The following article is, in effect, a letter addressed: "To Frenchmen Everywhere." The writer is both aviator and author. He is known to Americans through his books, "Wind, Sand and Stars," "Night Flight" and "Flight to Arras."

By Antoine de Saint-Exupery

FIRST of all, France! The German night has swallowed up the country. For a time we were still able to know a little about those we love; we could still send them words of affection, even if we could not share the wretched bread on their tables. From afar we could catch their breathing.

All that is over now. France is nothing but a silence; she is lost somewhere in the night with all lights out, like a ship. Her mind and spirit have been absorbed into her physical being. We shall not know even the names of the hostages who tomorrow will die before the German rifles.

It is always in the cellars under a tyranny that new truths are born. Let us not play the part of braggarts. There are 40,000,000 people over there in France who must endure their slavery. We shall not be carrying any fire of the spirit to those who are already nourishing the flame with their life's blood—like the wax of a candle. They will deal with French problems better than we can; they have all the right to deal with them. Our talk about sociology, politics and art will carry no weight with them. They will not read our books, they will not listen to our speeches. Perhaps our ideas may make them sick.

Let us be infinitely modest. Our political discussions are the discussions of ghosts; ambitions among us are comic. We do not represent France; all we can do is to serve her. And whatever we do, we shall have no just claim for recognition. For there is no common measure between freedom to fight and bearing the crushing weight of the darkness. There is no common measure between the métier of the soldier and the métier of the hostage. The people over there in France are the only true saints. Even if we have the honor of taking part in the battle, we shall still be in their debt. There, in the first place, is the fundamental truth.

Men of France, let us be reconciled in order to serve!

I SHALL say a few words about the quarrels which have divided Frenchmen in the hope of doing something to remove them. For there has been a grave spiritual disorder among French people. The souls of many among us have been torn; these have need of peace of mind, and they should find it. By the miracle of American action in North Africa, all our different roads have led us to the same meeting-place. Why now should we get bogged down in the old quarrels? It is time to unite, not to divide, for opening wide the arms, not for exclusions.

Were our quarrels worth the hate we wasted on them? Who can ever maintain that he alone is absolutely right? Man's field of vision is minute; language is an imperfect instrument; the problems of life burst all the formulas.

WE were all in agreement as to our faith. We all wanted to save France. France had to be saved both in flesh and in the spirit. Of what use is the spiritual heritage if there be no heir? What good is the heir if the spirit be dead?

All of us hate the idea of collaboration. Some of us accused France of real collaboration while others saw only a ruse. Let us think of Vichy as a trustee in bankruptcy, negotiating with a greedy conqueror for delivery to France of a little grease for railroad cars. (France can no longer get gasoline, or even horses, to bring food to her towns.) The officers of the Armistice Commission will one day tell us about this persistent and atrocious German blackmail. A quarter-turn of the key—delivery of any less grease than required—and a hundred thousand more French children would die in the next six months.

When a single hostage is shot, his sacrifice shines forth. His death is the cement that binds French unity. But when the Germans, by merely holding up an agreement on grease for cars, kill a hundred thousand hostages of 5 years, where is the compensation for this slow, silent hemorrhage? What is the acceptable fixed price for dead children? What would have been the tolerable limit of Vichy's concession in its attempt to save them? Who can say?

You are aware that French denunciation of the armistice terms would have been equivalent to a return to a state of war. It would have justified the conqueror's seizure of all adult males as military prisoners. This blackmail lay heavily over France. The threat was plainly set forth. German blackmail is no jest. The rot of German prison camps yields only corpses. My country was thus threatened, purely and simply, with utter extermination, under legal and administrative pretense, of 6,000,000 men. France was armed only with sticks to resist this slave hunt. Who is in a position to say for certain what should have been her resistance?

HERE at last is the seizure of North Africa by the Allies within sixty-six hours to prove, perhaps, that in spite of blackmail and in spite of two years of pressure, Germany has failed seriously to encroach upon this North African territory. Somewhere, then, there must have been attempts at resistance. Perhaps the victory in North Africa has been won, at least in part, by our 500,000 children who have died. Who would dare say that the number is insufficient?

Frenchmen, if we could reduce our differences of opinion

(Continued on Page 35)

The 'Indispensable Woman'

Indispensable in the kind of war we are waging, she will be equally indispensable in the kind of society we want to build. So much seems clear today.

By Margaret Culkin Banning

FAMOUS beauties and great actresses have never been more eagerly pursued by photographers and reporters than are the ordinary women of today who are joined to the war effort. Candid pictures of them appear everywhere, as seen at their lathes, filling cartridges, handling cranes, saluting in new uniforms, sewing parachutes. It is the girl who can set up her own machine in the shop who is news today, not the old-fashioned glamour girl of the night club.

The Library of Congress has compiled a list of references to books, articles and pamphlets which discuss women's part in the Second World War. It runs to seventy-six pages and lists 748 separate sources of information, and already it is incomplete. There has never been a time in the history of the world when women's efforts all over the world have received so much attention, so much documentation and so much praise.

Five million new women are being recruited for industry in the United States at the moment; and yet it is not more than a few years ago that an unemployment survey conducted by John Biggers brought in the report that the number of women in industry was creating a serious economic problem. Many employers and legislators shared this view. The reversal in regard to employment of women has been another sharp upset in American psychology and outlook, second in importance only to our swerve from a nation clinging to peace to one grimly insistent on war to the finish. This change is beginning to reach into the majority of homes in this country, just as the draft penetrates the average family. American boys are going to war, and American girls are going to work, and a lot of previous plans and theories have gone out the window.

Women build jeeps, women go into shipyards—even the copper and iron ore mines are looking for women workers. Women take over the running of farms in addition to milking the cows. Almost all industries and businesses that are going concerns are asking for women workers, and those that have not come to it yet are gravely warned by the Labor Department that they had better get ready to employ women and that they must swallow any remaining prejudices against using them in every possible phase of work. It seems, as one reads the papers and listens to the speeches, as if the supply of women couldn't hold out against the prodigious demand, and it is a fact that shortages of women have begun to appear in certain fields.

THE call for women in war work has resulted not only in a patriotic response from women but in a kind of pay-off. As girls and women were offered a choice of many jobs, a chance of being trained in new industries as well as an opportunity to serve their country, they left those professions and trades and jobs in which there seemed to be little or no future and at which they were working only because they had to earn a living. There is a notable shortage of teachers. Girls who never wanted to teach have left the field of pedagogy. There is a shortage of stenographers and secretaries in private businesses, for many girls are leaving those usually underpaid and futureless jobs, and many more would like to leave if they could pay their fares to Washington. There is a great shortage of domestic servants, and the selfishness and petty tyranny of many a housekeeper are coming home to roost as her cook or hired girl walks out.

But this result is quite incidental. The girls and women who have left teaching or typewriters or housework in order to go into war industry or into the auxiliary armed services have been actuated, for the most part, by the same motives that have made so many men enlist before they were drafted. It is a big war, and the women want to get into it to battle the enemy and help win the victory. Also, there is the chance to expand horizons, to go somewhere, to do something new, to learn something, to try another pattern of life, to choose instead of being sent. In addition, there is a living in it, and few men or women are so unrealistic as to disregard that even in wartime.

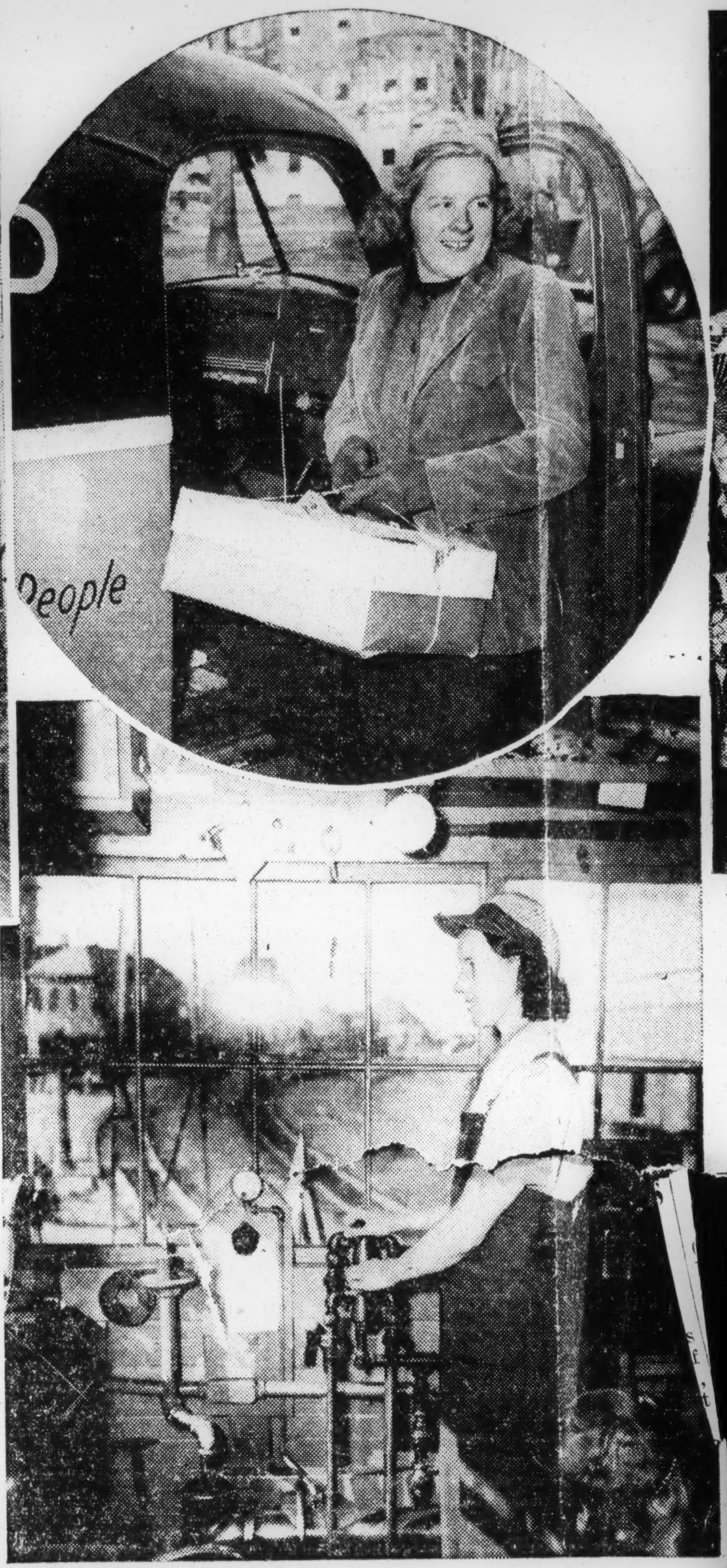
So in the great shake-up, women are trying their hands at innumerable new tasks, walking boldly into fields where for the first time the gates are open and it isn't necessary to climb over the fence to get in. At the beginning of the war we had in the United States some 13,000,000 women in industry. If the present call for another 5,000,000 is met, we shall have 18,000,000 working women, a tremendous number. That means that women will not only command a greatly increased share of the nation's earnings but that they will be truly indispensable to the prosecution of the war. They will be in practically every industry and occupation, working in many key places where maintenance of output will be absolutely essential to the armies in the field.

This fact is already true, not only in Great Britain but in all the warring countries in Europe and Asia. The R. A. F. relies heavily on its woman auxiliary force, the Waafs, and says that its work would be crippled without the help of the women on the ground. The British Navy

These Humdrum Jobs Are Real War Service

This is Women at War Week, an all-American, state-wide, and city-wide mobilization of American women behind the War Savings Bond and Stamp Program. It is also designed to focus attention on the work women are doing in America's total participation in this total war. The following article gives an idea of how those on the home front are putting their shoulders to the wheel.

By Josephine Ripley
Staff Writer of The Christian Science Monitor



By a Staff Photographer

These are a few of the women who have stepped into men's shoes in the unglamorous jobs of every day. Top, left to right: Mail Carrier, Miss Muriel Harvey, delivers mail in Auburn, Mass., succeeding Joseph Dumas, now in the Army. Laundry Driver, Miss Eleanor Peterson of Medford works for Beaconsfield Laundries, Brookline, Mass., collecting and delivering laundry. Manual Training Teacher, Miss Eleanor Gray, at Agassiz School, Jamaica Plain, Mass., instructs Joseph Ahern on the proper way to hold a file as he works on a breadboard. Below: Crossing Tender, Mrs. Andrea L. Hogan, at controls of Boston & Maine R. R. Hollis Street Crossing, Nashua, N. H. Her dog Rusty keeps her company.

There's Mrs. Harold E. Jackson of Richmond, Va., who stepped in to carry on her husband's window-cleaning business when he went off to war.

There's Mrs. R. J. Hall of Memphis, Tenn., who took over her husband's milk delivery route when he went into war work in an aircraft factory.

In Seattle, Wash., Mrs. Myrtle Kruse and Mrs. Mina Dow work in dusty, noisy, freight yards, checking loads and destinations, walking up and down the cinder path between long lines of boxcars and panting engines.

When Mrs. Andrea L. Hogan of Nashua, N. H., mother of three children, heard that a railroad company in her town needed a grade-crossing tender, she applied for the job, and got it. Now she's on the 3 p. m. to 11 p. m. shift.

So it goes, the country over. As the men drop out to shoulder a gun, women are stepping right up to take their places and carry on the humdrum, work-a-day tasks that have to be done.

For jobs such as these, there's no rolling of drums or playing of spotlights. These women aren't building Victory ships, welding airplane parts or wearing uniforms. They're as anonymous as the ground crews who keep 'em flying, and just as vital to the success of our total war effort.

So far, the enrollment of women in this type of war service has been voluntary. The time may come when it will be necessary for the Government to require a complete registration of its womanpower. Already Washington is talking of such a possibility, and the President has expressed confidence that hundreds of thousands of women would be glad to take war jobs if they were told they were needed.

Sixteen-year-old Muriel G. Irons of Pascoag, R. I., didn't need to be told. When brother Reginald went into the Army and it was impossible to find a man to take his place, she didn't hesitate to pitch right in as her father's "right-hand-man" and help him deliver ice and wood.

She tumbled out of bed every morning last summer at 4 a. m. Pretty, blonde and unassuming, Muriel even refused to get rigged up in overalls for the part, but dressed simply in a short-sleeved dress, ankle socks and sport shoes.

Dark-haired, 15-year-old Virginia DiLiddo of Worcester, Mass., was equally quick to step into the iceman's shoes of her brother when he was called to Army duty. She weighs 106 pounds and boasted that she could carry her weight in ice.

In Boston during a recent voluntary registration of women for part-time work as a "patriotic duty" to help meet manpower shortages, women of all ages flocked to the registration centers with eagerness to do "anything that will help in this war emergency."

One woman who works as an interior decorator during the day offered to serve from 6:30 to midnight in a restaurant making salads and sandwiches.

Another indicated that she would be willing to drive a truck. A grandmother said that she "wanted to help win this war" and would do anything she could to help between 10 a. m. and 3 p. m.

In cities all over the nation, where a voluntary registration of womanpower has been called for, the response has been the same. And it's all happening so quietly, without fanfare or heroics, that few realize the extent to which women have already taken over the everyday chores of men.

For instance, at a flying field in Arizona, five young women have joined to form an airplane maintenance crew as their contribution to the war effort. They report for work armed with mops and pails, and every plane that comes in gets a good scrubbing.

Several women had the distinction of being the first lifeguards in their State this summer. June E. Gardner of Pawtucket, R. I., was one of these. Boasted her boss, Capt. Roger W. Wheeler, Chief of the Division of Lifesaving: "I'd stack June against any female lifeguard in the United States. In fact, I'd even say she is almost as well-qualified as some of my best men."

It was the wartime shortage of manpower which drew slim Rebecca Conaty of Brighton, Mass., into the unique business of flagpole rigging. Working for her cousin, owner of the concern, she rigs flagpoles, installs, maintains and repairs them.

Girl conductors are ringing up fares in the streetcars of San Francisco. Feminine gas station attendants are "manning the hose" in many cities. In New York, Washington, Boston and other cities, women are driving taxis, and it's rumored that they may even beard the lion in his barber shop.

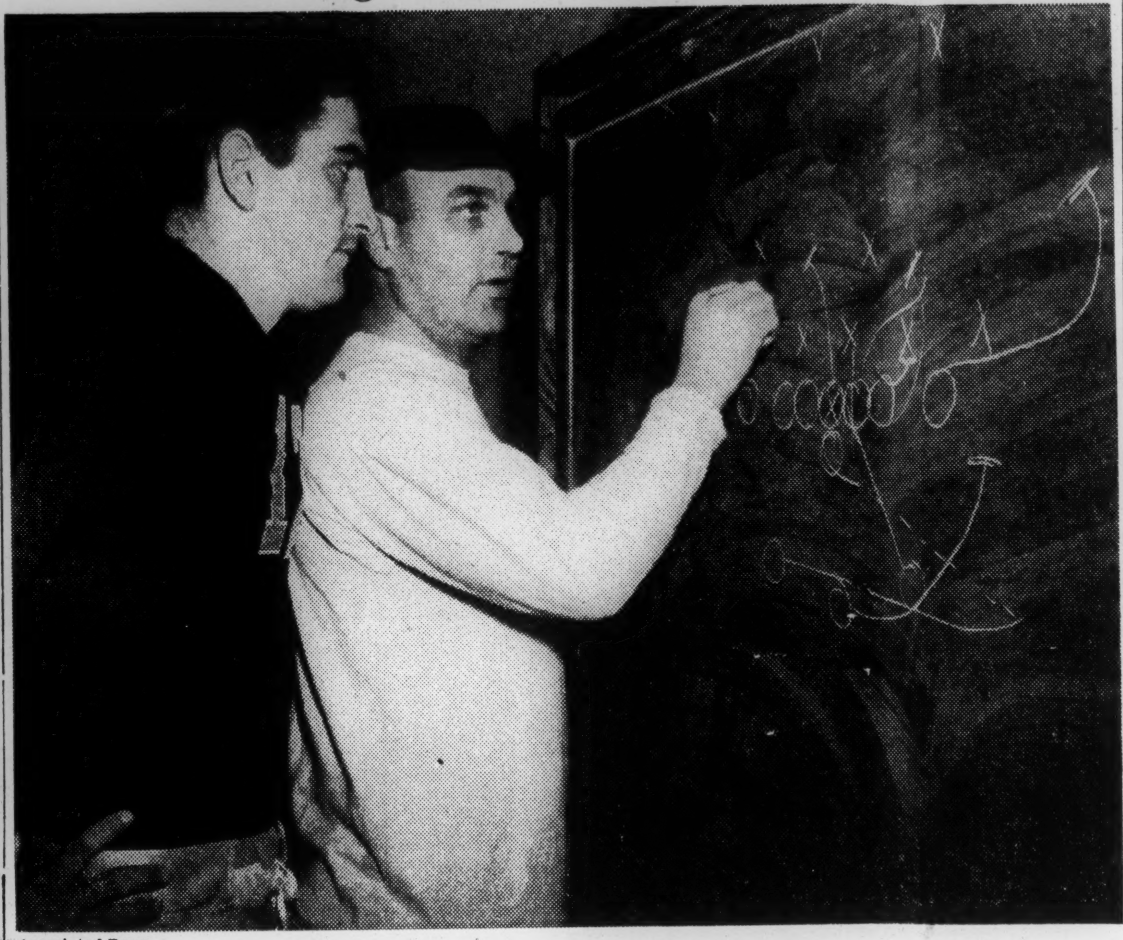
Considering what has already taken place, the possibility that before long at least one out of every four housewives in the coun, may be at work in some kind of essential industry doesn't seem such an astounding prospect.

But then, why should it? American women have been equal to every great crisis in the history of our land. The hardships endured by the women who landed on Plymouth Rock would make the sacrifices of today seem like trifles in comparison.

There's a tough fiber and a splendid spirit in American womanhood that is ever ready to respond when the call comes, and it should not seem surprising in the least that women today are pitching in with a vim and determination equal to the finest traditions of their ancestors.

Manpower Shortage Confront Southwest Conference Officials

Charting More Power for the T



Associated Press

B. C. Quarterback and Backfield Coach

Eddie Doherty, left, quarterback of the Boston College eleven which today was voted the No. 1 team in the country, is shown here getting a few detailed instructions on his huge repertoire of T formation plays from his backfield coach, Carl Brumbaugh. B. C., which winds up its season Saturday against Holy Cross, is seeking its 10th straight victory this fall.

Three Teams in Tight Race

New Yale Leader In Marine Corps Reserve Outfit

NEW HAVEN, Conn., Nov. 24 (AP) — Big, Townsend W. (Tim) Hoopes of Derby, N. Y., whose six-foot, 190-pound frame may be in the uniform of Uncle Sam's Marines next fall instead of in a Yale football suit, is the Elis' new gridiron captain.

Tim was chosen late yesterday to succeed Spencer D. Moseley. He is a junior and a member of the Marine Corps Reserve. Under Yale's speed-up war curriculum, Hoopes may get his degree before the next football season, if any, rolls around.

The 20-year-old Hoopes, a southpaw passer and break-away runner, scored the winning touchdowns against Princeton and Harvard after long runs to bring the "Big Three" title to the Blue. He also plays intramural basketball and varsity rugby. Tim prepared for Yale at Andover.

William T. Brown of Short Hills, N. J., was named varsity manager. His assistants will be Eckley B. Coxemfourth, of Haverford, Pa., and Edward M. Gaillard, Jr., of Hamden, Conn.

Tulsa Faces Arkansas In Final Affair

TULSA, Okla., Nov. 24 (AP)—A nine-year problem collides with the University of Tulsa's bowl-boomed footballers Thanksgiving day.

The problem is Arkansas.

And what the Razorbacks could do to Tulsa, well, look at Georgia.

The last time Tulsa downed the Razorbacks—who haven't won a Southwest Conference game this season—was in 1933. Since then, the best the Golden Hurricane has been able to do were ties in 1934 and 1938.

Lost to Arkansas

Henry Frnka, coaching his first season at Tulsa last year, finished an otherwise successful schedule by losing to Arkansas, 13-6.

Frnka is doing his best to keep the undefeated, untied Hurricane from thinking about bowl possibilities until after the Arkansas game.

"This Arkansas game," says Frnka, "is going to be a very difficult one."

Tulsa's offense will be weakened by the loss of Dewey Ericksen, an unsung, but splendid blocking back. Reserve Fullback Dell Taylor may be used to fill Ericksen's position.

Frnka's respect for the Razorbacks wasn't diminished any by Arkansas' defeat of Detroit, 14-7, last week. It was Detroit's second loss of the season.

End College Play

The game will end the college play of Glenn Dobbs, great passer and kicker; N. A. (Mole) Keithley, a fine little breakaway runner; Wingback Cal Purdin; Center Charles Spilman, Guard Maurice Hail and End John Herriman.

"We want all those boys, who've played on two teams that lost to Arkansas, to end their careers here the right way," said Frnka. "I know they'll do their best, and I believe the other boys will help them get their reward."

While bowl talk is taboo around the squad, the university band is taking no chances on missing a trip. The band is sponsoring a dance after Thursday's game to raise money. For what? To pay the expenses of the band to a bowl game. Where? Well. . . .

Work Without Pay

NEW YORK (AP)—Even the officials will work for nothing when Brooklyn College and C. C. N. Y. meet on the football field Thursday to play off a recent 7-7 tie. The four, who volunteered their services when the teams agreed to play a second game for the Red Cross, are Sam Giangreco of Manhattan, Bill Tewhill of Brown, Alton Mark of Tennessee and Cliff Montgomery, Columbia's Rose Bowl star of 1934.

Boston College Eagles Top First Ten in Football Poll

NEW YORK, Nov. 24 (AP)—It took a little time, a little patience and a little help from Auburn, but Boston College finally made the grade and today the unbeaten, untied Eagles are the class of the nation's college football teams, according to 118 experts who voted in the Associated Press poll.

No better than third in any of the previous weekly polls, the Eagles took over the top spot after Georgia's Bulldogs, first-place choice for the past month, were bounced from the unbeaten ranks by Auburn Saturday, 27-13.

Georgia Tech Second

Georgia Tech, runner-up to the Bulldogs in recent weeks and logical successor to the throne, missed the No. 1 rating by a matter of 34 points and remained in second place, although the Engineers polled more first-place votes than Boston's Eagles.

After spilling Florida, 20-7, for its ninth-straight win, Tech was listed first on 50 ballots while only 47 sports writers voted the lead to a Boston College club that trampled Boston University, 37-0, for its eighth in a row. However, the Eagles drew 50 second-place votes to 36 for Tech and wound up with 1,078 points, compared with 1,044 for the Engineers.

Standing

The standing of the top 10 teams (first-place votes in parentheses, points figured on 10-9-8-7 etc., basis):

1. Boston College (47)	1,078
2. Georgia Tech (50)	1,044
3. Ohio State (16)	904
4. Wisconsin (2)	694
5. Georgia (1)	616
6. Tulsa (1)	577
7. Alabama	288
8. Notre Dame	281
9. Michigan	279
10. Tennessee	197

Sixty-eight of the 69 voters who named Georgia first a week ago hopped off the Bulldog bandwagon and Georgia slipped to fifth place in the standings as it started pointing for its showdown with Georgia Tech.

Gain Prestige

Ohio State, a notch behind fourth-place Michigan last week, gained prestige and the Big Ten title by clipping the Wolverines, 21-7. With 16 first-place votes, the Buckeyes moved into third place as Michigan dropped to ninth.

Wisconsin, in seventh place the last two weeks, jumped to fourth, and Tulsa, the only team in the group besides Boston and Georgia Tech to boast an all-victorious record, remained in sixth place.

The second 10 in the rankings: 11—U. C. L. A., 88; tie for 12—Santa Clara and Stanford, 72 each; 14—Southern California, 34; 15—Washington State (1), 29; tie for 16—Auburn and Mississippi State, 20 each; 18—Texas, 19; 19—William and Mary, 17; 20—Minnesota, 16.

Ray Florek did the blocking for Don Griffin when both were students at Fenger High in Chicago. He's doing it again this year at the University of Illinois.

Otto Graham Is Great Passer On Last Place Team

EVANSTON, Ill., Nov. 24 (AP)—Otto Graham of Northwestern gets the honor of being the best player on the best team ever to finish in the Western Conference cellar.

But the halfback's sensational football exploits have not been for a lost cause, although the Wildcats have had their darkest season in 20 years—one win in nine starts. Graham has been in there pitching all the time, blazing a trail of records in an attempt to lead his team out of the woods.

Hitting the target with 79 of 155 passes for 1,012 yards, Graham already has pushed last year's aerial marks of Notre Dame's Angelo Bertelli into discard and can append them further with only a mediocre day against the Great Lakes Bluejackets in Northwestern's final game Thursday.

Bertelli's midwest records of number of passes (124) and completions (70) have been smeared, and if Graham can pick up 26 yards through the air against the sailors he will better Bertelli's last season gain of 1,037.

He also needs 104 yards—by passing or running—to eclipse Tommy Harmon's total offensive conference record of 1,256 yards compiled in his 1939 junior year at Michigan. Graham's average per game has been 162.

Graham's tosses also have accounted for another record, one held by his battery mate, end Bob Motl. Motl has snagged 19 passes to date to beat Archie Harris' 1940 mark of 18 at Indiana.

In 1918, Northwestern held the great undefeated Bluejacket team, which won that year's Rose Bowl classic from the Mare Island Marines, to a scoreless tie—the only time during the season that Great Lakes failed to score. The sailors this fall have lost three of 10 games, but have won their last five by shutouts.

Attendance Record

LOS ANGELES, Nov. 24 (AP)—The Southern California-Notre Dame football game Saturday may set an attendance record for the season. The U. S. C. ticket office said yesterday that 60,000 admissions had been sold. Los Angeles Memorial Coliseum, scene of the contest, seats 103,000.

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OCCUPATIONS + INDUSTRIES - 1943

Serial No. R. 1571

[From the MONTHLY LABOR REVIEW (October 1943) of the Bureau of Labor Statistics, United States Department of Labor]

Wartime Employment of Women in Manufacturing[1]

WARTIME industrial expansion has resulted in almost doubling the number of women in manufacturing industries since October 1939, bringing the total number of women employed in June 1943 to more than 4¼ million. Women now comprise about 30 percent of all manufacturing wage earners. Field studies conducted by the Women's Bureau of the U. S. Department of Labor indicate that although many of the women hired have had no previous factory experience, they are well suited to many kinds of industrial work and are superior to men at certain tasks, particularly those which require dexterity and attention to details. The metal, industrial chemicals, and rubber industries have been especially active in recruiting women. These industries which produce the ships, planes, and implements of war employed nearly 2 million woman wage earners in June 1943, while the textile, leather, and apparel industries which have always utilized women in great numbers employed almost 1½ million.

TABLE 1.—*Estimated Employment of Woman Wage Earners in Manufacturing, by Economic Division,[1] January and June 1943*

Economic division	Woman wage earners				All wage earners (thousands)	
	Number (thousands)		Percent of total[2]			
	January	June	January	June	January	June
All manufacturing	3, 766	4, 276	27. 9	30. 9	13, 503	13, 821
Metal, industrial chemicals, and rubber industries	1, 438	1, 859	19. 4	23. 7	7, 422	7, 858
Basic metals	59	94	5. 6	8. 9	1, 048	1, 049
Metal fabricating	1, 292	1, 668	21. 7	26. 1	5, 965	6, 391
Industrial chemicals	21	26	9. 4	11. 1	226	229
Rubber	66	71	36. 1	37. 8	183	189
Food industries	248	262	25. 7	27. 5	965	953
Textile, apparel, and leather industries	1, 473	1, 455	58. 5	60. 2	2, 518	2, 416
Other manufacturing industries	607	700	23. 4	27. 0	2, 598	2, 594

[1] These divisions were devised to distinguish groups of industries of special significance in wartime. They represent combinations of complete industries classified by pre-war product and cannot be considered clear-cut categories.

[2] Percentages computed on unrounded figures.

During the initial stages of war expansion the manufacturing industries hired men preponderantly. Between October 1939 and April 1942, 5 million wage earners were added to manufacturing industries; less than 10 percent of these were women. As long as a supply of men was still available many industries were reluctant to hire women. Traditionally women had been utilized only in lower-paying jobs. The industries which had large proportions of women were, for the most part, highly seasonal and therefore offered very irregular employment. An entirely new concept of the jobs which women could fill was necessary before they could be used to their fullest capabilities. The growing depletion of the male labor supply and the rapidly expanding war industries literally forced employers to try out women in all industries and almost all jobs, between April 1942 and June 1943. Thus, women represented more than four-fifths of the net total of 1,833,000 wage earners added to the manufacturing industries between April 1942 and June 1943.

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[1] Prepared in the Bureau's Employment Statistics Division.

Table 2.—*Estimated Employment of Woman Wage Earners in Manufacturing, in Specified Months, October 1939–June 1943*

Year and month	Woman wage earners		Man wage earners (thousands)	All wage earners (thousands)
	Number (thousands)	Percent of total		
1939: October	2, 268	[1] 25. 6	6, 586	8, 854
1940: October	2, 270	24. 1	7, 134	9, 404
1941: April	2, 425	23. 5	7, 885	10, 310
October	2, 743	23. 6	8, 873	11, 616
1942: April	2, 751	22. 9	9, 237	11, 988
October	3, 336	25. 3	9, 830	13, 166
1943: January	3, 766	27. 9	9, 737	13, 503
February	3, 915	28. 7	9, 718	13, 633
March	4, 015	29. 2	9, 712	13, 727
April	4, 112	29. 9	9, 623	13, 735
May	4, 172	30. 5	9, 524	13, 696
June	4, 276	30. 9	9, 545	13, 821

[1] Derived from data of the 1939 Census of Manufactures: "Persons Employed in Manufacturing Establishments, by Sex," August 1941.

Before the war 85 percent of all woman wage earners in manufacturing were in the nondurable-goods industries. However, the rapid wartime growth of the durable-goods industries relative to the nondurable resulted in more nearly equalizing the distribution of women in these two groups. By June 1943, 58 percent of all woman wage earners were in the nondurable-goods industries, while 42 percent were in those making durable goods.

The number of men in the durable-goods industries continued to increase until March 1943, even though male employment in nondurable-goods industries began to decline in October 1942. Undoubtedly the drop in male employment in the nondurable-goods industries was in large part due to the shifting of workers to jobs in essential war industries. However, the increase in male employment in the manufacture of durable goods in this period (October 1942 to March 1943) was greater than the decrease in their employment in nondurable-goods industries, indicating that some men came from the farms, older men came out of retirement, and youths left schools.

Since March 1943 the number of men in both the durable- and nondurable-goods industries has been declining. Fortunately the number of women entering manufacturing industries was more than sufficient to replace the men leaving for the armed forces. For this reason total manufacturing employment has continued to increase to a level of almost 14 million.

Each of the major durable-goods groups showed substantial increases in the number of women hired. Most spectacular of these was

TABLE 3.—*Estimated Employment of Woman Wage Earners in Durable and Nondurable Goods Manufacturing, in Specified Months, October 1939–June 1943*

Year and month	Woman wage earners				Man wage earners (thousands)		All wage earners (thousands)	
	Number (thousands)		Percent of total					
	Durable goods	Nondurable goods	Durable goods	Nondurable goods	Durable goods	Nondurable goods	Durable goods	Nondurable goods
1939: October	340	1, 928	[1] 8. 6	[1] 39. 5	3, 627	2, 959	3, 967	4, 887
1940: October	381	1, 889	8. 4	38. 7	4, 144	2, 990	4, 525	4, 879
1941: April	445	1, 980	8. 5	39. 1	4, 798	3, 087	5, 243	5, 067
October	517	2, 226	8. 6	39. 9	5, 518	3, 355	6, 035	5, 581
1942: April	577	2, 174	8. 9	39. 6	5, 923	3, 314	6, 500	5, 488
October	982	2, 354	13. 2	41. 3	6, 482	3, 348	7, 464	5, 702
1943: January	1, 382	2, 384	17. 6	42. 4	6, 493	3, 244	7, 875	5, 628
February	1, 494	2, 421	18. 7	43. 0	6, 504	3, 214	7, 998	5, 635
March	1, 573	2, 442	19. 4	43. 4	6, 526	3, 186	8, 099	5, 628
April	1, 656	2, 456	20. 3	43. 9	6, 489	3, 134	8, 145	5, 590
May	1, 727	2, 445	21. 2	44. 2	6, 432	3, 092	8, 159	5, 537
June	1, 814	2, 462	22. 0	44. 2	6, 436	3, 109	8, 250	5, 571

[1] Derived from data of the 1939 Census of Manufactures: "Persons Employed in Manufacturing Establishments, by Sex," August 1941.

the transportation-equipment group, which employed only 1,800 women in October 1939 and employed more than 466,800 in June 1943. In the latter month women accounted for more than 20 percent of the total number of wage earners in this group, as compared with only 1 percent in October 1939.

TABLE 4.—*Estimated Number of Woman Wage Earners, by Major Industry Groups, in Specified Months, October 1939–June 1943*

Industry group	Number (in thousands)				
	1939	1941	1942	1943	
	October	April	April	April	June
Durable goods:					
Iron and steel	68. 8	93. 2	124. 3	293. 9	317. 8
Electrical machinery	100. 3	131. 2	174. 2	313. 4	323. 6
Machinery, except electrical	28. 4	43. 0	62. 0	218. 9	240. 2
Transportation equipment	1. 8	4. 3	33. 1	410. 9	466. 8
Automobiles	29. 5	31. 6	20. 5	118. 2	142. 0
Nonferrous metals	34. 9	55. 4	56. 6	83. 4	91. 7
Lumber and timber	4. 1	8. 0	11. 6	49. 9	53. 0
Furniture	36. 9	31. 6	39. 9	82. 8	89. 9
Stone, clay, and glass	35. 3	46. 6	55. 2	84. 7	89. 3
Nondurable goods:					
Textile-mill products	527. 7	554. 9	587. 7	627. 0	620. 2
Apparel	626. 0	687. 9	729. 6	696. 1	669. 8
Leather	139. 6	149. 9	161. 1	169. 2	164. 5
Food	263. 8	177. 4	211. 6	245. 7	262. 1
Tobacco	64. 9	61. 2	62. 1	63. 0	60. 3
Paper	69. 4	71. 4	78. 1	96. 1	100. 2
Printing and publishing	59. 3	69. 6	71. 4	88. 1	92. 2
Chemicals	46. 0	59. 3	102. 4	219. 5	231. 2
Petroleum and coal	. 3	. 5	. 8	5. 9	6. 9
Rubber	33. 0	42. 0	39. 9	68. 3	71. 4
Miscellaneous	98. 1	105. 5	129. 1	176. 9	182. 7

The extent to which certain industries employed women is best illustrated by the fact that 8 industries employed more than 100,000 women each in June 1943. These are aircraft, automobiles, boots and shoes, cotton goods, electrical equipment, machine-shop products, men's clothing, and women's clothing. An additional 10 industries employed more than 50,000 women. Further proof of the widespread utilization of women in manufacturing may be seen in the fact that in 30 industries women represent more than half of the total employment, while in only 6 do they account for less than 5 percent. In October 1939 women constituted less than 5 percent of the employment in 42 industries.

TABLE 5.—*Number of Women per 100 Wage Earners in Manufacturing Industries and Groups in Specified Months, October 1939 to June 1943*

Industry group or industry	1939 October[1]	1941 April	1942 April	1943 April	1943 June
All manufacturing	25.6	23.5	22.9	29.9	30.9
Durable goods	8.6	8.5	8.9	20.3	22.0
Nondurable goods	39.5	39.1	39.6	43.9	44.2
Iron and steel and their products	6.2	6.8	7.9	17.0	18.5
Blast furnaces, steel works, and rolling mills	1	1	1	5	6
Gray-iron and semisteel castings	1	(3)	(3)	6	7
Malleable-iron castings	4	(3)	(3)	8	9
Steel castings	(2)	(2)	(2)	6	7
Cast-iron pipe and fittings	(2)	(2)	(2)	2	2
Tin cans and other tinware	28	30	31	39	41
Wire drawn from purchased rods	11	9	9	19	23
Wirework	22	21	20	28	31
Cutlery and edge tools	28	21	26	31	32
Tools (except edge tools, machine tools, files, and saws)	11	10	10	20	20
Hardware	23	27	28	35	36
Plumbers' supplies	5	5	6	18	19
Stoves, oil burners, and heating equipment, not elsewhere classified	3	4	5	25	25
Steam and hot-water heating apparatus and steam fittings	6	7	8	22	25
Stamped and enameled ware and galvanizing	23	21	22	34	36
Fabricated structural and ornamental metalwork	(2)	(2)	1	7	7
Bolts, nuts, washers, and rivets	14	13	15	26	29
Forgings, iron and steel	(2)	1	(2)	11	12
Screw-machine products and wood screws	12	14	24	32	35
Steel barrels, kegs, and drums	11	(3)	(3)	23	28
Firearms	5	3	8	24	27
Electrical machinery	33.9	31.9	33.5	45.1	46.1
Electrical equipment	17	24	26	39	40
Communication equipment	58	55	56	59	59
Machinery, except electrical	5.2	5.2	5.9	17.7	19.2
Machinery and machine-shop products	4	5	6	19	21
Engines and turbines	2	1	1	12	14
Tractors	1	(2)	(2)	8	12
Agricultural machinery, excluding tractors	1	1	1	7	12
Machine tools	(2)	1	2	12	13
Machine-tool accessories	3	5	6	20	20
Textile machinery	4	4	5	17	18
Pumps and pumping equipment	6	3	4	12	13
Typewriters	[4] 32	35	35	39	39
Cash registers, adding and calculating machines	[4] 16	20	21	32	34
Washing machines, wringers, and driers, domestic	4	6	9	31	36
Sewing machines, domestic and industrial	12	13	16	29	30
Refrigerators and refrigeration equipment	9	10	10	26	26
Transportation equipment, except automobiles	1.0	.9	2.7	18.5	20.4
Locomotives	1	(2)	(2)	2	3
Car building, electric and steam railroad	1	(2)	1	6	9
Aircraft and parts, excluding aircraft engines	[4] 1	1	6	37	39
Aircraft engines	[4] 1	1	4	27	28
Shipbuilding	(2)	(2)	(2)	6	8
Motorcycles, bicycles, and parts	10	16	17	25	27
Automobiles	6.6	5.4	4.8	18.1	21.0
Nonferrous metals and their products	13.7	16.6	15.3	20.3	22.1
Smelting and refining, primary, of nonferrous metals	(2)	(2)	(2)	2	2
Alloying and rolling and drawing of nonferrous metals, except aluminum	7	9	10	17	18
Clocks and watches	48	47	48	51	53
Silverware and plated ware	22	25	23	33	32
Lighting equipment	26	26	23	29	32
Aluminum	10	7	4	12	15

See footnotes at end of table.

TABLE 5.—*Number of Women per 100 Wage Earners in Manufacturing Industries and Groups in Specified Months, October 1939 to June 1943*—Continued

Industry group or industry	1939 October	1941 April	1942 April	1943	
				April	June
Lumber and timber basic products	0.9	1.6	2.1	10.4	11.0
Sawmills and logging camps	1	1	2	9	9
Planing and plywood mills	1	2	3	15	17
Furniture and finished lumber products	10.3	8.4	10.3	23.0	25.1
Mattresses and bedsprings	18	16	17	33	35
Furniture	6	7	8	22	25
Wooden boxes, other than cigar	8	7	9	23	26
Caskets and other morticians' goods	20	17	17	22	23
Wood preserving	(2)	(2)	(2)	3	3
Stone, clay, and glass products	11.1	13.1	14.6	23.6	24.8
Glass and glassware	18	18	20	30	31
Cement	(2)	(2)	(2)	2	3
Brick, tile, and terra cotta	3	5	5	7	9
Pottery and related products	32	32	37	43	43
Gypsum	(2)	(2)	(2)	11	11
Wallboard, plaster (except gypsum), and mineral wool	1	1	1	16	21
Lime	(2)	(2)	(2)	1	2
Abrasive wheels	16	14	14	37	38
Textile-mill products and other fiber manufactures	43.4	43.9	45.1	50.0	50.3
Cotton manufactures, except smallwares	38	39	40	45	45
Cotton smallwares	53	52	57	62	63
Silk and rayon goods	50	52	52	58	58
Woolen and worsted manufactures, except dyeing and finishing	41	42	42	47	47
Hosiery	61	60	62	67	68
Knitted cloth	38	46	45	51	51
Knitted outerwear and knitted gloves	76	74	78	80	79
Knitted underwear	76	74	74	78	78
Dyeing and finishing textiles, including woolen and worsted	17	18	21	28	29
Carpets and rugs, wool	31	30	30	37	38
Cordage and twine	33	31	32	43	44
Apparel and other finished textile products	74.0	76.1	76.6	78.3	78.8
Men's clothing, not elsewhere classified	66	68	69	72	73
Shirts, collars, and nightwear	88	86	88	89	89
Underwear and neckwear, men's	87	85	86	89	89
Work shirts	91	89	89	92	91
Women's clothing, not elsewhere classified	78	81	80	80	80
Corsets and allied garments	90	87	88	89	89
Millinery	69	70	68	71	68
Handkerchiefs	94	90	92	94	94
Housefurnishings, other than curtains, etc	64	62	61	74	75
Textile bags	66	63	68	73	70
Leather and leather products	40.0	40.2	41.7	48.9	49.4
Leather	9	9	9	16	17
Boot and shoe cut stock and findings	30	30	33	35	36
Boots and shoes	45	47	49	56	57
Leather gloves and mittens	61	64	65	72	72
Trunks and suitcases	30	31	39	51	52
Food	28.4	21.3	23.7	27.0	27.5
Slaughtering and meat packing	15	15	16	21	22
Condensed and evaporated milk	3	7	7	13	14
Ice cream	17	12	17	21	24
Flour	2	3	3	7	7
Cereal preparations	29	31	30	34	36
Baking	15	20	22	29	29
Sugar refining, cane	7	8	10	18	19
Sugar, beet	1	(2)	(2)	3	6
Confectionery	67	61	60	63	62
Malt liquors	1	1	1	7	9
Canning and preserving	56	40	42	43	42
Tobacco manufactures	66.9	66.5	66.8	67.7	67.8
Cigarettes	48	49	49	55	54
Cigars	80	79	80	80	81
Tobacco (chewing and smoking) and snuff	50	47	46	50	52
Paper and allied products	24.0	23.8	24.0	30.8	31.6
Paper and pulp	8	9	9	14	16
Paper goods, other	35	36	39	46	47
Envelopes	56	55	56	58	58
Paper bags	51	48	41	48	47
Paper boxes	41	38	39	46	47

See footnotes at end of table.

TABLE 5.—*Number of Women per 100 Wage Earners in Manufacturing Industries and Groups in Specified Months, October 1939 to June 1943*—Continued

Industry group or industry	1939 October	1941 April	1942 April	1943 April	1943 June
Printing, publishing, and allied products	17.8	20.7	21.6	26.7	27.6
Newspapers and periodicals	8	(3)	(2)	9	10
Printing, book and job	23	26	27	35	36
Lithographing	22	24	24	35	38
Bookbinding	42	42	43	51	51
Chemicals and allied products	14.7	15.0	17.8	29.5	31.2
Paints, varnishes, and colors	5	5	6	12	13
Drugs, medicines, and insecticides	42	46	47	56	56
Perfumes and cosmetics	69	62	66	69	67
Soap	17	17	16	23	23
Rayon and allied products	26	24	24	32	34
Chemicals, not elsewhere classified	3	4	4	10	10
Compressed and liquefied gases	1	(2)	(2)	5	5
Ammunition, small-arms	32	(3)	36	48	49
Cottonseed oil	1	(2)	2	3	5
Fertilizers	(2)	1	2	6	6
Products of petroleum and coal	.3	.4	.6	4.8	5.5
Petroleum refining	(2)	(2)	1	4	5
Roofing materials	1	1	1	8	13
Rubber products	24.6	27.8	28.1	36.7	37.8
Rubber tires and inner tubes	14	16	18	29	30
Rubber goods, other	28	31	30	40	42
Miscellaneous industries	36.6	34.7	35.7	43.9	44.9
Professional and scientific instruments and fire-control equipment	15	14	16	41	42
Photographic apparatus	26	22	22	35	35
Optical instruments and ophthalmic goods	33	30	32	42	42
Pianos, organs, and parts	10	13	11	23	24
Games, toys, and dolls	51	45	48	52	53

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[1] Derived from data of the 1939 Census of Manufactures: "Persons Employed in Manufacturing Establishments, by Sex," August 1941.

[2] Less than 1.

[3] Not available.

[4] Derived from Census data by estimation.

In the preceding tables sex-ratio data are shown for 132 industries from October 1939 to June 1943. Ratios for October 1939 are derived from the 1939 Census of Manufactures release, "Persons Employed in Manufacturing Establishments, by Sex." Data from October 1940 through June 1943 are based upon reports to the Bureau of Labor Statistics from manufacturing establishments. For June 1943, reports were received from approximately 23,000 establishments, employing more than 8 million wage earners. This number represents about three-fourths of the establishments which report employment each month and constitutes more than four-fifths of the wage earners in the complete sample.

Each series published is based on a sample covering at least one-fifth of the estimated wage-earner employment for the entire industry. Half the series are based on samples covering 60 percent or more of the estimated wage-earner employment; 10 percent on samples greater than 90 percent.

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WOMAN WORKERS IN TWO WARS

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Woman Workers in Two Wars

By Mary Robinson, *U. S. Women's Bureau*

THE present war has revived an interest in the number of woman workers and their importance in the First World War. No exact comparison of the extent of women's employment in the two wars can be given, owing to lack of comprehensive data for 1917–18. However, it is known that there were over 8½ million woman workers at the time of the January 1920 decennial census—a little more than a year after the close of the war and after curtailment in war industries, general demobilization of the troops, and some leveling off of the emergency peak employment of women.

In view of the 18 million woman workers envisioned by authorities as a likely total to be attained in this country by July 1944, it seems safe to assume that the number of women in employment during the present war will be double that in the first, when the armistice was signed after 19 months of war with a total of over 4 million men under arms. Against this can be set the 9.3 million men in the armed forces in July 1943 (19 months after the present conflict began) and the anticipated number of 11.3 million if the war continues until July 1944.

In discussing the current employment of women, table 1, presenting the number and proportion of woman wage earners according to the decennial censuses from 1870 to 1940, serves as a helpful background, indicating the tide of women's employment in this highly industrialized country.

Table 1.—*Trend in Woman Labor Force, 1870 to 1940*

Year	Women in the labor force [1]		
	Number	Percent of all persons in the labor force	Percent of all women of working age
1870	1,836,288	14.7	13.1
1880	2,647,157	15.2	14.7
1890	4,005.532	17.2	17.4
1900	5,319,397	18.3	18.8
1910	7,444,787	19.9	21.5
1920	8,636,512	20.4	21.4
1930 [2]	10,752,116	22.0	22.0
1930 [3]	10,679,048	22.0	24.3
1940	12,845,259	24.3	25.4

[1] Gainfully occupied women 1870 to 1930, women in the labor force (employed, seeking work, or on public emergency work) in 1940. Figures before 1940 are for persons 10 years old and over; figures for 1940 are for persons 14 years old and over; both these age groups are shown for 1930. Data for 1890 to 1930 are corrected figures from the Census release "Age Composition of the Nation's Labor Force: 1890 to 1930," October 1938.

[2] 10 years old and over.

[3] 14 years old and over.

At the 1940 census—taken the last week in March, 2 months before the United States launched the defense program—there were not far from 13 million women in the labor force (including almost 2 million unemployed women seeking work), and these formed a little less than a fourth of the total labor force and a little more than a fourth of the woman population.

The data in table 2, taken from the month-by-month statistical estimates of the labor force prepared by the Bureau of the Census, reflect the effect on the Nation's womanpower of the increasing demands of war. It will be noted that whereas in June 1940 (immediately after the beginning of the defense program) women constituted only 23.5 percent of all persons employed, this proportion had risen to 31.3 percent 3 years later.

Table 2.—*Estimates of Civilian Woman Labor Force,*[1] *June 1940–43*

Month	Civilian woman labor force [2]		Employment						Unemployment	
			Total		Nonagricultural		Agricultural			
	Number (millions)	Percent of total labor force	Number (millions)	Percent of total employment	Number (millions)	Percent of total nonagricultural	Number (millions)	Percent of total agricultural	Number (millions)	Percent of total unemployment
June 1940	13.9	24.7	11.2	23.5	9.7	26.5	1.5	13.6	2.7	31.4
June 1941	13.9	24.7	11.9	23.7	10.4	26.5	1.5	13.8	2.0	33.3
June 1942	15.0	26.7	13.9	26.1	11.8	28.2	2.1	18.3	1.1	39.3
June 1943	17.3	31.7	16.7	31.3	14.4	34.7	2.3	19.3	.6	50.0
July 1943 [3]	17.7	31.9	17.1	31.5	14.8	35.1	2.3	19.0	.6	50.0

[1] 14 years of age and over.
[2] Excludes persons in institutions.
[3] Latest data available.

In June 1940, it was estimated, there were 11.2 million employed women as against 2.7 million unemployed and seeking work.

During the months following, despite the speeding up of the production of defense materials, influenced to considerable degree by the Lend-Lease program, there was no appreciable advance in women's employment. In 9 of the 12 months from June 1940 through May 1941 the number of woman workers dropped even below the 11-million mark. In June 1941 the total climbed to 11.9 million. In this whole period, as well as in the next 6 months preceding the attack on Pearl Harbor, comparatively few women were hired by defense plants, primarily because of the large backlog of unemployed men on which the expanding munitions industries could draw—a total of 5.9 million in June 1940, which went up to 6.3 million by July, and in June 1941 had still not fallen below the 4-million level. Moreover, there was encountered in many quarters a definite discrimination against women as munitions workers, based on traditional prejudice and fear that they lacked mechanical ability despite their proved skills along such lines in the manufacture of armament in 1917–18. In January 1942, a month after the attack on Pearl Harbor, there were 11.9 million employed women, the same total as in the preceding June. The number of unemployed women, however, had dropped by 0.7 million, indicating the more-than-seasonal absorption of a substantial proportion of the new June workers as well as other woman job applicants. June totals are weighted with new young workers coming into the labor market for the first time or for vacation jobs.

After January 1942 came the sudden and rapid rise in women's employment. Compared to June 1940 there were 2.7 million more by June 1942, and 5.5 million more by June 1943 when the total number of employed women had soared to 16.7 million. This was a net increase in the 3-year period, of 50 percent. Thus, with the sudden impact of war and its simultaneous speeding up of the draft and war-material production, barriers to women began to fall, in some quarters rapidly, in others only as an inevitable necessity. A few intransigents still maintain a hold-the-line policy against woman labor.

The significance of this 5.5-million increase in employed women is reduced considerably by two facts: (1) The women in agriculture in June 1943 constituted a larger proportion of all agricultural workers (19.3 percent) than in June 1940 (13.6 percent), and a large number of these farm workers are seasonal. For example, June 1943 showed a half million more women at work on farms than in May, and a million and a half more than in January. In nonagricultural employment the increase of women between the two Junes was 4.7 million. (2) The absorption as wage earners of some 2 million unemployed women into the ranks of the employed meant that the actual rise of women in the "labor force" from June 1940 to June 1943 was just 3.4 million. (In June 1940 there were 2.7 million jobless women, whereas the corresponding number for June 1943 was 0.6 million.) For men the 3-year period showed a net gain in employment of 0.3 million, or an increase of 0.8 percent. During these years, however, the taking up of the unemployment slack for men was most striking; the June 1940 total of 5.9 million jobless men had fallen to 0.6 million in June 1943.

What proportion of the 3.4-million increase among women in the labor force consists of homemakers who have sought employment for the duration it is impossible to say. According to a War Manpower Commission estimate, during 1942 half a million housewives joined the wage-earning ranks. All told, in June 1943, about a third of the woman population was employed—3 in 5 of the single women, 1 in 6 of the married, and 1 in 2 of the widowed, separated, and divorced women.

In any survey of the greater use of womanpower, as a result of the war, and of the scaling down in their employment with the coming of peace, account should be taken of the spectacular increase among women in the executive branch of the Federal Government, from a little over 186,000 at the end of June 1940 to nearly a million at the end of June 1943. The new recruits are almost entirely at work in the War and Navy Departments and new war agencies, and many of them will be dropped when the emergency is over.

In addition to women in the civilian labor force in June 1943 were the 36,121 nurses on duty with the armed forces and the 100,000 women who were WACs, WAVES, SPARS, Marines, and WAFS. The sizable number of woman Red Cross workers, though on duty with the military services, is included in the civilian labor force and not with the armed forces.

Because of the many uncertainties of war, forecasting for the next year as to further induction of women in the combined labor and armed forces is difficult. However, if by July 1944 the personnel of the armed forces is stepped up to the estimated 11.3 million (a 2-million increase over this past July), and the work force in the munitions industries is increased to a prospective 11.6 million employees (in accordance with the War Manpower Commission estimate), obviously many more women must be recruited. It is estimated that of the 2 million additional workers in munitions, 1.3 million will be women. Over 200,000 more women are wanted for the armed forces by the Army and the Navy; and the need of the essential civilian industries for many additional women cannot be overlooked, as evidenced by the active recruitment campaign sponsored by the War Manpower Commission.

All indications are that the recruitment of the required number of women for each of these several main classifications will be much more difficult in the coming months than in the past, and that the patriotic motive will have to constitute the chief appeal.

Women's Employment in Manufacture of Munitions in Two Wars

There are striking parallels between the war of 1914–18 and the present one as regards the war industries and occupations giving employment to women.

WORLD WAR I

In the first years following the armistice, the Women's Bureau of the U. S. Department of Labor published several reports analyzing the position and achievements of women. Many of the statements in those bulletins read like pages from today's chronicles, though on a much smaller scale.

Women in steadily increasing numbers, then as now, entered fields which prior to the war had been regarded as men's exclusive province, while many other thousands of women carried on in the traditionally feminine food and fabric industries. Not only were the experienced women already in manufacturing at the outbreak of hostilities utilized largely for munitions making, but such groups as school teachers joined their ranks and large numbers of inexperienced women never before in the labor force were inducted into the work.

A list of 19 "war agent and implement industries" was drawn up to show how growing numbers of women were hired.[1] The most significant of these were iron and steel, lumber, transportation equipment, chemicals, metal and metal products, automobiles, electrical machinery and equipment, rubber goods, optical goods, and scientific and professional instruments.

As the months passed and the second draft drew off more and more men into combat services, the more urgent became the demand for woman labor. This was true in the vast majority of occupations that made definite contribution to the winning of the war—not only in manufacturing but in railway transportation, telegraph and telephone operation, farm work, and service trades.

> They operated the lathe, the miller, the drill, the planer, the grinder, and other machine tools; they became proficient in handing the file, the wrench, the hammer, and other hand tools; they read blueprints and used micrometers, calipers, and gages; they used rules and compasses to lay out work for machine cutters. Their employment in these capacities extended into every branch of machine-shop manufacture.[2]

The list in table 3 (page 656) reveals the similarity of the occupational performances of women in the two wars.

Other parallels are shown by the following excerpts from a Women's Bureau publication:[2]

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[1] Women's Bureau Bulletin No. 12: The New Position of Women in American Industry, Washington 1920.

[2] Women's Bureau Bulletin No. 13: Industrial Opportunities and Training for Women and Girls, Washington, 1922 (p. 11).

Naturally the largest number went into factories manufacturing shells, pistols, guns, and cannon, but in these factories women operated and handled the same kinds of machines and tools as did the smaller, but yet appreciably large, group of women who made parts for engines and pumps; for machines and machinery; for automobiles, motorcycles, and airplanes; for agricultural implements; or who worked on tools, saws, hardware, electrical apparatus, instruments, and clocks.

The kind and extent of experience secured by women in these shops differed greatly. In a few it was sufficiently varied to have in time made them "machinists." * * * In the larger number of shops it was the policy to make "specialists" of women as it is of men. Such shops taught a woman the underlying principles and methods of setting up and operating just one machine, together with the varying characteristics of different metals and tools used in the shop in order to enable her to cut each piece of metal and grind each tool without waste of metal or tool. In other shops where the work was of a repetitive character—which was especially true in munition factories—time was not taken usually to give the women employees general instruction in machine-shop fundamentals. The woman was taught just enough to enable her to turn out, assemble, or inspect duplicated parts at great speed. * * *

* * * their employment was extended during this period in the old occupations and to new occupations on sheet iron, tin, aluminum, brass, and copper sheets. * * * they operated blanking, shearing, and drawing presses to cut or shape these sheets, they soldered and riveted, welded, and assembled; dipped, buffed, and finished. They worked on oil and gas stoves, hoods, radiators, tanks, and fenders of automobiles, on agricultural implements, on tin and aluminum containers and utensils, on brass and bronze fabrications, on cartridges, and on airplanes. The machines operated were largely automatic or required little skill to manipulate. Some women learned how to set up punch presses, but few set up automatic machines. * * *

A smaller number of women * * * went into the foundries * * * While a few were employed at molding * * * sorting, grinding, and filing castings, and laboring, the larger number worked in the core-making branch of the industry, a branch in which women had been used for some years before the war. * * *

In the instrument and optical industries women were employed not only on the metal parts of the instruments but in grinding and polishing lenses, mounting and inspecting, and in assembling the entire instrument. Women were peculiarly adapted to this work because of the smallness of the parts and the delicate fashioning required. * * *

Turning to the woodworking industries, the largest group of women substituted for men during 1917 and 1918 went into furniture and veneer factories, there to work on peacetime products or to make airplane parts or munition and tool boxes or wheels for artillery trucks. * * *

In the chemical industries, exclusive of explosive manufacture, the tasks turned over to women were largely of a laboring character or involved the feeding or tending of automatic machines.

That women were highly satisfactory as workers in the 1917–18 war industries is evidenced by the following statement by the President of an Ohio metal-goods plant:

> In reference to the occupations in which women have replaced men the following may give you some idea of the diversity of the work. In the machine department women became expert and got out much greater production in running turret lathes, punch presses, bench lathes, milling machines, drill presses, grinding machines, and engraving machines, and in addition to the operation of these machines we taught them to grind their tools, to act as job setters, and to superintend some of the departments. In the inspection department practically every inspector was a woman. In the assembly departments * * * all were women, and they did better work and got out more production than men whom we tried on the job at various times without success. We found, too, that we could place as much, if not more, dependence in women in coming to their work and remaining on the job, which accounts for our having the lowest turnover in help in any factory ever heard of, which was less than 4 percent per year. We taught women to inspect tools and check them over according to the drawings after they came from the tool shop, in which department women became expert. In the optical department most of the employees grinding lenses were women,

> who were remarkably successful in the work. In the assembling of lenses we had none but women on the job, and you will find by inquiring at the Ordnance Department that our lenses and prisms were as fine as any in the world.[3]

The Assistant Secretary of War, acting as the Director of Munitions at that time, gave the following report:

> For the successful carrying out of our program for the production of vast quantities of explosives and propellants, as well as shell loading, the women of America must be given credit on account of the highly important part they took in this phase of helping to win the war. Fully 50 percent of the number of employees in our explosive plants were women, who braved the dangers connected with this line of work, to which they had been, of course, entirely unaccustomed, but whose perils were not unknown to them.[4]

WORLD WAR II

If space permitted, similar successful achievements of women as war workers in other lines of endeavor could be cited. Yet as already noted and as definitely revealed by surveys of the Women's Bureau, carried on in the latter half of 1940 and the whole of 1941, employers in defense plants either were ignorant of, or disregarded, the convincing facts concerning women as war workers a quarter of a century ago.

Now the tide has definitely turned and women form a vital and growing force in many of the key war industries. The trends in specific industries indicate that womanpower is even more indispensable in winning the present war than in winning the first one. In general women are being utilized extensively in three broad categories of jobs: Those that women have always done, now multiplied by the demands of war; those where they have been used as substitutes for men, either as replacements or in expanding industries; and those that are new processes never performed by either sex (some of these are the result of subdivision of skilled operations to facilitate mass production, while others are the result of the manufacture of new kinds of equipment).

To assist employers confronted with the need to hire women for the first time or to utilize them on a much more extensive scale, the Women's Bureau has made occupational analyses of a number of key war industries, indicating in which occupations women can be most readily adjusted and in which they can be substituted for men.

As women in the various war industries are performing in general more or less similar jobs, the accompanying list (table 3) cuts across the industries and classifies the occupations according to whether they are using women extensively, to some extent, or to only a slight extent. It should be noted, in this connection, that although woman machine operators frequently do repetitive work, to an increasing degree they are setting up their own machines and performing skilled operations.

Though men are still found in most of the top and highly skilled industrial jobs, women to increasing degree are doing the more skilled, difficult, and disagreeable jobs as well as certain dangerous and sometimes inappropriate types of work. At many processes women are as good as men, while at others they surpass men, especially in jobs requiring patience and painstaking finger sensitivity and dexterity. They soon learn to work to tolerances as fine as ten-thousandths of an inch.

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[3] U. S. Women's Bureau, Bulletin No. 12: The New Position of Women in American Industry, Washington, 1920 (pp. 18, 19).

[4] Idem p. 19.

Table 3.—*Typical Operations on Which Women Were Employed in War Production in June 1943*

[Code: A—Women now used extensively; B—Women now used to some extent; C—Women now used to only a slight extent]

Occupation	Code
Manipulative skills:	
Operation of machines:	
Drill presses, single and multiple spindle	A
Milling machines, light and medium, and micro machines	A
Light turret lathes and hand screw machines	B
Bench and watchmakers' lathes	A
Grinding machines (surface, cylindrical, and internal)	B
Gear shaping, cutting and hobbing machines	B
Light punch and forming presses	A
Miscellaneous machines: Profilers, shavers, nibblers, shapers, routers	B
Automatic screw machines	B
Woodworking machines: Saws, sanders, shapers, profilers	B
Nailing machines	C
Power sewing machines	A
Optical and opthalmic glass grinding and polishing	B
Burring, polishing, lapping, buffing, etc., on lathes, drill presses, polishing jacks, and other machines	A
Hand finishing machined parts by filing, burring, lapping	A
Hand gluing (for example, of plywood parts)	B
Sheet-metal forming and riveting	A
Welding:	
Acetylene and torch welding	B
Electric arc welding	A
Spot welding	B
Soldering	A
Electrical work—wiring and assembling parts, winding coils and armatures, soldering, taping, etc	A
Assembly—all types of light sub-assembly and final assembly (often requiring the use of hand tools as pliers, mallets, screw drivers, files, electric drills, bench assembly machines, and riveting presses)	A
Artillery ammunition, loading (bag and shell loading, fuzes, primers, etc.)	A
Operations on bullets, cartridge cases, and primers in small arms ammunition	A
Servicing and repairing of planes at air depots (ground mechanics)	A
Painting:	
Spray-painting small parts and products	B
Touch-up work and hand finishing	A
Radium	A
Stenciling, masking before painting, racking and unracking	A
Shipfitters and loftsmen	C
Helpers	A
Inspection:	
Visual	A
Gage, micrometer or caliper (sometimes with blueprint reading)	A
Calibrating	B
Checking and testing raw materials, stock, and salvage parts	B
Packing, labeling, etc	A
Factory service:	
Production planning, routing, and control	B
Draftsmen and tracers	A
Factory clerks (timekeepers, stock-record clerks, etc.)	A
Tool-crib and stockroom attendants and dispatchers	A
Crane operators	B
Guards	B
Electric-truck drivers, intraplant loading and hauling	B
Supervising (forewomen, leadwomen, group leaders)	B
Training (in plant)	C
Personnel relations:	
Personnel administration (director, assistant director, assistant)	B
Employment—interviewing and hiring	B
Nursing	A
Welfare	A

Women's successful performance in the manufacture of most kinds of war material in the present war is common knowledge and is attested by many statements of industrial authorities. Managements in war plants today which not so many months ago scoffed at the idea of woman employees are now equally articulate in their praise of women's ability and dependability in the matter of technical skills.

The Undersecretary of War, in a congratulatory message sent recently to Army's woman employees, said:

The women of America have responded ably and gallantly to the call to service the war has made upon them. Nowhere is this more evident than in the plants operated by the War Department. They have supplanted men at the bench and the lathe; they are doing civilian work in the nine Service Commands efficiently and in increasing numbers.

In the arsenals, in the ports of embarkation, in the motor centers, in all the War Department installations, their skills are invaluable and their devotion to duty is proven. They are testing guns, making ammunition, fixing motors, sewing uniforms, inspecting ordnance, driving trucks, doing many of the thousand and one jobs that are necessary to keep the machinery of war moving.

I salute them for their faithfulness, their cheerful courage, and their patriotism.

Employment of Women in Various Industries in Present War

AMMUNITION MANUFACTURE

Of the key industries in the present war, the one which opened its doors most readily to women, prior to the United States' entrance into the war, was the manufacture of ammunition for small arms and artillery. One reason for this was that such employment did not run wholly counter to tradition, in view of the peacetime use of about 2,000 women on production in the United States Government arsenals. Thus, with the expansion of such establishments for war purposes, increased hiring of women was a logical procedure. Moreover, as many of the steps that go into the making of bullets, cartridges, and shells are simple, requiring training of not more than a week (designed primarily to instill in the worker the proper precautionary habits for handling explosives), women could be easily utilized.

As the Government during the defense period undertook to build many ammunition plants (particularly for bag and shell loading) to be operated by private management, countless numbers of new jobs were created which had no sex traditions and which could be done by women, often as well as, and sometimes better than, by men. In fact, these plants were erected in many rural areas—chiefly in the Southern, Middlewestern, and Mountain States—with the expectation of recruiting thousands of women.

Within the span of the defense and war activities both the number and proportion of women in these loading plants have mounted steadily until the total runs into many thousands, and constituted in March 1943 over two-fifths of all the factory employees. In the bag-loading plants some processes are given over entirely to women, who are handling not only the smokeless powder but the more hazardous black powder. Though women were not at first employed in the manufacture of explosives, reports show that, in the months since the war started, this field also has opened up to them.

It is impossible to gage fully the amount of womanpower utilized at present for ammunition manufacture, as data are not available for many of the contracting and subcontracting plants.

The types of work done by women in shell-loading plants vary from plant to plant. There is possibility for increased use of women for loading the larger shells, even those of 105 mm. or more, if men are provided to do the heavy lifting. According to the War Manpower Commission, recruiting for replacement needs will become a real problem by the end of 1943 in bag-, shell-, and bomb-loading establishments, and it seems likely that women will be called on more extensively, especially if discrimination against Negro women is eliminated.

In 34 ammunition plants surveyed by the Women's Bureau in 1942–43 the beginning minimum hourly rates for women ranged from less than 40 cents in 2 plants to 70 or 78 cents in 3. The beginning rate in 15 plants was less than 50 cents, 3 paid 50 cents, and the rest 55 to 78 cents. Earnings of factory women in a large representative ammunition plant in the Middle West averaged about $35 for a 48-hour week.

AIRCRAFT MANUFACTURE

The aircraft industry has expanded into a stupendous mass production in an incredibly short time. The spectacular development of aircraft production would have been impossible without the aid of women.

The Women's Bureau survey (in the spring of 1941) of 7 typical aircraft-assembly plants disclosed that only a fraction of 1 percent of the force were women. Among some 100,000 workers on the production lines there was only an occasional woman. Three plants had none. Those employed were engaged chiefly in such work as sewing covers for ailerons, rudders, wing tabs; others were on minor jobs connected with electrical assemblies. The Bureau's occupational analysis revealed that though women were able to perform many of the jobs in the aircraft plants, they definitely were not wanted there. This was true even as late as the fall of 1941, when the War Department was urging the employment of women in airplane manufacture. In fact, only a little over 4,000 women were so engaged a week before the attack on Pearl Harbor.

Then, as the industry realized the task ahead in meeting the President's blueprints for aerial warfare, and the prospective male labor shortage resulting from the draft, the barriers to women were dropped. In June 1943 more than 310,000 women were reported as factory workers in the industry, including airframe, engine, and propeller plants. More than another 100,000 were reported in office and other nonfactory jobs. This industry too has an additional woman force of undetermined number, similar to that in ammunition manufacture, helping to make airplane parts in plants working on a contract or subcontract basis.

The total number of women in this whole field of plane manufacture probably exceeds that in any other war industry, with the possible exception of the electrical industry. The ratio of women in the factory labor force has been steadily increasing, but for military reasons cannot be given in conjunction with the number of women. The proportion varies from factory to factory, the highest in any one plant being almost three-fifths.

Women are helping to make all kinds of planes, from Lightnings and Thunderbolts to Flying Fortresses and Liberators. They are employed on production of autogyros, helicopters, gliders, and the sky "locomotives" for transporting freight. Women are performing with intelligence and dexterity not only all the jobs the Women's Bureau pointed out as readily within their capabilities, but others besides.

The minimum entrance-pay rates for women are very generally the same as for men, 60 cents an hour being the most usual for the day shift, and throughout the industry the policy of equal pay prevails also for the more skilled occupations.

As to typical weekly earnings for women in aircraft, a survey by the National Industrial Conference Board revealed for May 1943 average earnings of a little over $39. The expert woman welder in one plant, reported as receiving a journeyman's rate of $1.32 an hour, and almost $70 in 48 hours, is phenomenal and not usual.

ELECTRICAL-PRODUCTS INDUSTRY

Of all industries that have converted largely to war production, the manufacture of electrical products probably employed the largest proportion of women before the war. The industry has grown considerably, but the relative importance of women has increased even more rapidly. In March 1943 there were nearly 300,000 woman wage earners. In the employment of women this industry probably equals aircraft manufacture, and rises conspicuously above aircraft in the ratio of women to men. For example, it is estimated that in April 1943 women comprised three-fifths of the force in the manufacture of radio and communications equipment. Much of the great growth in women's employment in peacetime, as well as in the war period, is attributed to the development and use of radios.

A special study by the Women's Bureau of war-industry plants in New Jersey, made in the summer of 1942, gives some detail as to women's work on various electrical products. Data for 37 plants employing over 25,000 factory women indicate that substitution of women for men was not extensive. A little over nine-tenths of the women were on the same occupations as before the war, and not quite 7 percent were on jobs formerly done only by men, the rest being on operations new to the particular plants. Of all workers then on processes formerly done only by men, almost a fourth were women. The type of such jobs varied from plant to plant.

Beginning hourly rates reported for women in this study ranged from 40 to 50 cents in more than two-thirds of the plants. As to weekly earnings, if the data of the National Industrial Conference Board are taken as a criterion, the average for May was a little above $34.50; figures compiled by the Illinois Department of Labor for the same date show an average of about $31.00.

WAR-INSTRUMENTS MANUFACTURE

A type of production highly essential to meet many war needs and eminently suitable for large-scale employment of women is the manufacture of sighting, fire-control, scientific, and professional instruments. A striking example is the air pilot's instrument board.

The survey of the war-instruments industry by the Women's Bureau was in the fall of 1941, when the highly skilled processes in instrument making were still regarded in some plants as predominantly male, and before the industry was expanded to its present large-scale production to supply the essential instruments for the wartime Army and Navy, particularly in connection with the airplane and shipbuilding program.

The expansion of the industry and the decrease in the male force available for the instrument field, as for others, have opened up opportunities for thousands of women; almost two-fifths of the factory workers in the spring of 1943 were women. The subdivision of some of the old, more highly skilled jobs into new and simpler processes has led to more rapid absorption of women.

In the 17 plants included in the Bureau's survey in the fall of 1941, the proportions of women varied greatly, ranging from 3 to 50 percent. It was clear that women constituted a great potential labor force for this type of manufacture, with its small, light, intricate products. Statistics issued by the War Manpower Commission, which included other than factory employees, showed the woman labor force in the industry to have increased from 26 percent of the total in May 1942 to 43 percent in May 1943.

No recent data on rates in this industry are available. In the fall of 1941, women's minimum hourly rates ranged from 35 to 55 cents, 40 cents being the most frequently reported; for men the range was from 40 to 61 cents, and 55 cents was the most common rate. In the 2-year period since then there has probably been some increase, particularly in view of the rising cost of living.

CANNON AND SMALL-ARMS MANUFACTURE

In the manufacture of cannon and small arms, almost no women were employed prior to the attack on Pearl Harbor, but their number has been mounting conspicuously since then. An investigation made in the summer of 1942 of four Government arsenals and four private enterprises disclosed 11,000 women among the 75,000 employees, or 15 percent of the total.

The small-arms branch was employing women to a much greater extent and on a wide variety of machines—in fact, on more different types of machine tools than were reported in any other of the war industries studied by the Women's Bureau. More women were operating milling machines than any other one kind. An April 1943 estimate placed the proportion of women in this branch of industry at about 31 percent.

In cannon manufacture, characterized by much heavy work, women were found on many different kinds of operations but none were then running heavy-duty machines in the big-gun shops. In April 1943 almost 16 percent of the employees on cannon were women.

The Bureau's study revealed not only striking variations from plant to plant in the utilization of women but many jobs where they could replace men and release them to fields having more acute need of male labor. Men and women interchanged on the same job or carried on comparable work on the same shift; or women performed, on the day shift, operations done by men at night. Again, a certain type of work performed extensively by women in one plant might be done entirely by men in another; for example, one arsenal had no women on even the simplest or lightest machine operations in making small-arms components, but had them driving electric trucks, making large wooden packing boxes, operating band saws, and so on. Other firms had no women on such jobs as these but in certain machining departments 60 percent were women. Many men, whom women could easily replace, were also found in clerical jobs; in fact, 40 to 82 percent of the office workers in the small-arms plants were men.

Women could have been utilized to a much fuller extent in this field than they were, since much "worrying away of the metal" was necessary and women are particularly good at this. An indication of the amount of metal that must be removed by gradual machining is gained from the fact that for one type of machine gun the raw stock and forgings weigh 101 pounds and the finished steel parts 18 pounds.

With the influx of women to these industrial establishments after the United States, entrance into the war, the basing of rates on occupation rather than on sex became a pressing issue, because there had previously been an almost entirely male force and the hiring of women brought few or no changes in the physical characteristics of the jobs.

Three of the eight plants visited in the Women's Bureau survey had adopted the equal-pay principle. Where wage differentials existed, the problem had become increasingly acute both for the women hired and for the men inducted into the armed forces, whose wage levels thus were lowered on the jobs to which they hoped to return. That this problem still needs solution in some cases is indicated by the fact that, even in 1943, of three plants making guns, howitzers, and mortars, none paid women the same minimum entrance rates as men.

In four of the gun plants reporting in 1942–43 on women's beginning minimum hourly rates, the range was from 50 to 60 or 65 cents, while in eight small-arms establishments such rates ran from less than 40 cents to 60 cents.

PRODUCTION OF MACHINE TOOLS

In the highly skilled machine-tool manufacture some women gained a slight foothold after the country's involvement in hostilities, their first opportunity since World War I. The rapidity with which women have recently been hired, however, may be judged from the fact that by April 1943 there were nearly four times as many wage-earning women in the industry as in August 1942. It is not at all uncommon today to find that in plants with 2,500 or more workers, from 12 to 20 percent are women.

A special study of 15 well-known machine-tool shops, made by the Women's Bureau in the summer of 1942, revealed that about 4 of every 5 women in factory work were in productive occupations such as machining, assembling, and inspecting. The others were primarily in various shop clerical jobs, such as timekeeping, stock chasing, production control, and the like, in service work, in the toolroom and tool crib. The data showed, furthermore, that in spite of the great size and complexity of the average machine tool and many of its parts, substantial numbers of women could be employed without extensive training in plants making only the machine tools proper as well as in those where smaller and less-complicated accessories and other products are also made.

Curiously enough, the amount of experience the management has had with women in factory work shows no discernible correlation with the degree to which the scope of women's employment has broadened as a result of the war emergency. Three of the firms that were most progressive in their employment policies in regard to women, opening to them a variety of productive jobs under liberal conditions for the gaining of skills, had no women on production prior to the spring of 1942.

At the time of the study one firm was planning eventually to place women on almost every type of work, except where heavy lifting was required. This included the operation of a variety of machine tools.

Women were to be hired in this firm as replacements for men and not to expand the labor force.

Data on minimum entrance rates for women in 11 firms visited in 1942–43 show a range of from 40 cents an hour in 2 plants to 60 cents an hour in 1; 7 of the plants paid from 45 to 55 cents. Four of 10 firms reporting paid the same minimum entrance rates to women as to men. In May 1943 the average weekly earnings, as reported by the National Industrial Conference Board, were a little over $36.

SHIPBUILDING INDUSTRY

The necessity to produce in record-breaking time the ship tonnage needed for war, has led to a tremendously expanded work force and to the revolutionary procedure of active recruitment and widespread utilization of women in this former stronghold of male labor. In 1917–18, few women were employed in shipyards and most of these were in the yards which attempted substitution of women for men. Further, women had no place in the industry in peacetime; the 1939 Census of Manufactures revealed only 36 women so employed.

It was not until the summer of 1942 that the need to draft women's services became acute, simultaneously with the growing scarcity in male labor for this vital industry. As many inexperienced men had been quickly trained and adapted to shipyard jobs and as women were successfully performing more or less similar operations elsewhere, it was decided that womanpower must be the answer to enable the shipbuilding program to be carried out on schedule time.

In June 1942, only 0.4 percent of the wage earners in commercial yards were women, but by June 1943, the proportion had risen to about 7 percent. The extent of women's employment varies from yard to yard.

In a number of yards the prejudice against women on the part of both management and labor, though still lingering in some sections, is rapidly disappearing under the stress of necessity. The attitude of one official is typical. When questioned over a year ago in the Women's Bureau survey of shipbuilding as to what jobs would be most suitable for women if and when needed, he replied "None." Today that yard employs several thousand women who are proving themselves satisfactory at numerous occupations.

At present, thousands of women are at work in shipyards on all coasts. They are helping to build and repair all types of vessels—Liberty ships, destroyers, cruisers, and submarines—and everywhere are proving their ability to do the job whether difficult, disagreeable, or dangerous. They are found in the shops, and outside in the yards or in the ways in summer heat or below-zero temperatures. In some cases they can be seen walking on the narrow planks high up on the scaffolding, going up and down ladders, or crawling with their welding equipment through small openings within the hull of the ship. They may even be seen cleaning out the bilge, or doing sandblasting on the outside of a ship in drydock.

Although there are various shipbuilding jobs beyond women's strength or endurance which they should not be called on to do, the end of their possible utilization is not yet in sight.

This industry deserves honorable mention for having employed women on the equal-pay basis with men, in regard to both minimum entrance rates and wages for the various occupations and degrees of skill. However, to some extent women's advance in the industry is blocked, when in the course of progression are found heavy jobs they can neither perform nor bypass under union or plant regulations.

Shipbuilding in general leads all the other war industries in regard to average wages for woman employees. The National Industrial Conference Board figures for May 1943, show an average weekly wage somewhat in excess of $44.

STEEL MILLS

The iron and steel industry is another which, under the exigencies of war, is capitulating to woman labor. Vital as the steel mills are for the Nation's war effort, they have not been exempt from the comb-out for servicemen, and reports from various sources disclose a steady infiltration of women to an increasing number of operations in manufacture of this critical material.

To be sure, for many years some girls and women have been employed in the industry. In recent months, however, virtually all the large steel companies have substituted women for men on a substantial and increasing number of jobs. This is particularly true in the Middle West, where acute shortages of male workers have developed.

In general, women are employed at work that is not too heavy or on which sheer muscle is not essential. They are doing jobs in the unskilled-labor class as well as a number calling for a considerable degree of skill. They may be "hot chain men," crane operators, core makers, chemists, or factory clerks, or they may be engaged in nail and wire drawing, or running various kinds of machines in the maintenance shops. Women are even employed in some mills to finish heavy plate for tanks, landing mats, deck plates, and steel for cartridge cases. At one of the Gary (Ind.) mills, women are working in many departments. They have been admitted to the open-hearth and blast-furnace works for the first time in history, operating cars for transfer of materials, serving as test carriers, delay clerks, and ingot shippers. At the Gary armor plant operated for the Army, some time ago women comprised a third of the force and it was believed that eventually the proportion might be increased to a half.

OTHER ESSENTIAL WAR INDUSTRIES

Women's share in war production is too extensive and varied a story to treat in satisfactory detail in this résumé. Bare mention must suffice of the introduction of women into certain fields, their increased employment in others, and their useful services in various kinds of enterprises, not usually identified with their labors, that are concerned with both war and civilian needs.

Combat vehicles.—Even plants producing heavy items of combat material, such as tanks or large artillery pieces, are not only employing more and more women but placing them on types of work usually done by men. By March 1943, women formed 7 percent of the workers in tank and combat-vehicle factories.

Rubber.—In the rubber industry, which employs large numbers of women in peacetime, many women have for months been doing such jobs on military equipment as machine-sewing on barrage balloons, making flotation bags, applying rubber cement where fixtures are attached to assault boats, finishing rubber rafts, testing inflation of gas bags, and storing and inspecting life belts. This industry is now training women for the previously masculine operation of tire building. An Ohio plant, using 100 women on tire building, reports the experiment as eminently successful, with the women doing even the heavier part of removing the tire from the drum and tossing it on the hook of the conveyor system that carries it away for curing and vulcanization. Women in the rubber industry are a growing part of the force, comprising 27 percent in May 1942, and 39 percent in May 1943 (including all women in this field, office as well as factory workers).

Lumber.—A few illustrations will help to depict the new position of women where only men have been employed. A West Coast lumber company last year charted no fewer than 135 jobs that women might do in its factory work. Other lumber mills in the Northwest have hired so many women that they now constitute a fifth of the work force. Even the logging camps have been invaded by a woman contingent, on such outdoor jobs as running logs on the river or inspecting floating logs for loose timbers. Women are even reported as responsible for the felling of trees. Nearer the mills they are employed in sorting, stacking, painting ends of lumber, or loading box cars with the smaller material.

Mining.—A decided innovation is the employment of women in certain above-ground jobs in the mining industry—for mines producing coal, copper, iron, silver, and gold. For example, the coal mines have begun to employ women in the mine shops and for picking slate on mine tipples. In connection with iron ore, women are found as laboratory technicians testing samples. In the nonferrous-metal mining industry some women are being hired to tend conveyors from the mill crushers, or to operate trippers (the small ore cars which shuttle back and forth distributing ore to the bins). Other women are being used to regrade ore and some are serving in mine-lamp houses, repairing and maintaining miners' electric lamps.

Pulp.—In the pulp mills women have stepped into men's jobs sliding slabs of paraffin into vats of coating solutions, operating the special presses that roll off tons of waxed paper every hour, or acting as testers in the bleach plant.

Oil refining.—Oil refineries on both the East and the West Coasts, have taken on women for various processes formerly done exclusively by men, such as operating control valves on turbines which clean carbon from pipes or doing various kinds of laboratory work.

Beet-sugar refining.—Women have gone into beet-sugar refineries to operate machines such as juice evaporators, to run first and second carbonation, third saturation, centrifugals, granulators, and melters; and some have learned to boil sugar, a job that is exacting and somewhat of an art.

Flour milling.—To some extent, with possibilities for increased numbers, women have entered the flour-milling industry to take over some of the jobs formerly done by men. These range from packaging and loading sacks up to 24 pounds in weight to laboratory testing. Women are also operating sewing closure machines.

Consumer goods.—Any roll call of essential war industries must include those producing such important consumer-goods manufactures as fabric, food, gloves, shoes, and many other articles of equipment for troops and cantonments—industries which normally are large employers of women and which during the present emergency are relying on them even more extensively. In May 1943, women constituted about 49 percent of the textile workers and 77 percent of the clothing workers. The food industry is one of vital importance to the armed forces and civilian population as well as to our allies through the Lend-Lease program. The extent to which it relies on women's labor is indicated by the fact that in May 1943, women formed 34 percent of the force. However, in some branches, notably canneries, women constitute a conspicuously large part of the workers.

Earnings in the textile, food, and apparel branches fall materially below those in the key war industries. Recent Illinois data show that in all three the average weekly pay for women ranged from $24 to $26. New York figures tell a similar story except that for apparel factories, a $30 average was reported. The National Industrial Conference Board reveals averages in the several fabric branches ranging from $24 to just below $31.

Occupations requiring scientific training.—One field in which women have forged farther ahead in this war than in the last, and which cuts across practically all the industries discussed to this point, is that of laboratory work or operations requiring scientific training. In 1917–18 women had few if any opportunities along these lines, but today women as technicians, draftsmen, cartographers, chemists, physicists, radio operators, metallurgists, meteorologists, geologists, engineering aides, and even as full-fledged engineers, have been in great demand.

Along lines of industrial relations, personnel administration, and supervisory work, women in considerable numbers are rendering valuable service in many of the war plants with a large woman force.

Clerical work.—No roster of women's war occupations is complete without the clerical field. Many additional opportunities for office work have opened up to women not only in the Government service, but more spectacularly in unusual positions in industrial establishments. Various types of war plants have hired women for clerical work in place of the men they once employed, and have put women on factory clerical jobs quite different from the usual more or less routine office work. In the opinion of an official in a large company, there will be a continuing utilization of women for some of these assignments after the war, for which they would not have had an opportunity except for the war.

Transportation and communication.—Unique in their widespread involvement with both military and civilian requirements are the highly complicated and important fields of transportation and communication. The railroad, local transit, and airway branches of the transportation industry not only have been admitting women to men's jobs, but in many instances have been actively recruiting them. In May 1943, about 195,000 women were engaged in the various branches of transportation, and many additional women are needed.

The commercial airlines, the youngest branch of the industry, have readily accepted women on the same terms as men and given them the same training, the same wage rates, the same advancement opportunities, and the same seniority rights. This branch was said to be able to absorb one woman for every two men, using women, for example, in ticket offices, shops and hangars, on the airfields, and on the planes as hostesses.

Although the railroads actually are employing a larger number of women than any other transportation branch, women constituted in May 1943, only 6 percent of all employees. It was expected that during 1943 the total of 100,000 women employed in World War I would be reached and passed. Despite some opposition on the part of male labor, women already are doing jobs regarded definitely as men's in a peacetime economy, in the offices and shops, even in the roundhouses, at ticket windows and information desks, in station and baggage-room work, as cleaners and oilers of engines, as turntable operators, and even on "dressing" the tracks—to mention only a few of the many occupations on which women have been found to be satisfactory.

In local transit service throughout the country a total of 15,854 woman workers was reported for May 1943, and the intercity bus services had 8,510 women in May. As conductors and motormen on trolley cars, as conductors and drivers on busses, as ticket agents, loaders, traffic clerks, and accountants, women have become familiar sights. They also are at work behind the scenes, in the shops, car barns, and garages.

Trucking companies (with over 54,500 women in May 1943) and taxicab firms also are finding women efficient substitutes for men.

The entire communication field, which has always depended to considerable extent on woman workers, is now employing even larger numbers, and is continually calling for more, in the lines which have developed the most conspicuous breaches through the withdrawal of men—the war-burdened telephone and telegraph services and commercial broadcasting studios.

ESSENTIAL CIVILIAN SERVICES

Reference has been made to the acute need for workers to carry on such essential civilian services as work in laundries, dry-cleaning plants, canneries, hotels, restaurants, stores (department, specialty, grocery, drug), and beauty shops; to engage in office work, teaching, home nursing, child care, office cleaning, domestic service, and other pursuits.

Until recent months too narrow a concept was held as to what constituted war work, too little attention paid to the indispensable role of such civilian jobs in the Nation's wartime economy. However, September 1943 was chosen in which to hold a special campaign to salute and recruit women as workers in more than 100 of these "unglamorous" everyday jobs listed by the War Manpower Commission (which is sponsoring the campaign) as "war jobs." To dramatize these jobs as comparable in importance to the production of munitions, a Nation-wide effort, in which many forces are cooperating, is being made.

As the war effort lightens, these essential civilian jobs will require two in every three of the woman workers. It is hoped that the recruitment campaign will induce many from the still large reserve of nonemployed housewives without small children to respond, including women who would not under ordinary circumstances go into such pursuits for remuneration but who as volunteers may be rendering more or less similar services, for example, in hospitals, churches, or canteens.

Unfortunately, from the viewpoint of woman wage earners accustomed to employment in these essential services, the war period has witnessed no sufficient effort to increase the wages for such jobs, which too often are found in the low-paying class. Recent data for laundries in Illinois, New York, and New Jersey show, for example, average weekly earnings of woman wage earners ranging from $17.50 to $21. Such wages, as compared with those in almost all other fields competing for labor, are convincing evidence of the reason for the forced closing (reported by the Office of War Information) of 600 laundries in various localities during the past year.

The National War Labor Board has recently, in a number of cases, approved a raise in pay rates for workers in laundries as well as for telephone workers and certain hotel employees, on the basis of substandard wages.

An opinion in connection with an increase of 15 cents an hour granted to workers in 12 Portland (Oreg.) laundries, despite a previous advance commensurate with the "Little Steel" formula, declared:

> Reasonable price adjustments would seem to be justifiable in such cases as the instant one so that the operators will not be compelled to pay such low wages in order to stay in business. American labor should not be asked to subsidize American industry by working for wages below the level of health and decency. In cases such as this one, that is exactly what a wage denial would amount to. The burden of subsidizing the laundry industry of the country should be lifted off the backs of its low-paid workers and placed upon the consumers of laundry service.

Canneries, too, which are having a struggle in many areas to get enough workers for their emergency peaks, suffer from the custom of paying wages below the levels in most other industries. An indication of their difficulty in securing woman labor in a community, in competition with the better-paying war industries, is found in the New York and Illinois averages for the food industry in the spring of 1943—$23 and $25, respectively.

For the same reason, stores in many places have been unable to hold their employees. A Bureau of Labor Statistics study of Philadelphia department stores disclosed a $24 average for women in the selling division in September 1942, while a more recent Illinois report gave $21.54 as the average in that State. Earnings of woman clerical workers in manufacturing establishments in October 1942, averaged $27.50 in Illinois and $30 in New York.

It is true that these various enterprises have suffered seriously from the induction of men into military service, but concurrently both male and female workers have been migrating to better-paying occupations or to those more closely identified with the war. As a result, the public in many areas is experiencing some difficulty in obtaining food, clothing, and various services—especially when employment in war work and the more complicated mechanics of ordinary living reduce individuals' opportunity to take care of such matters themselves.

The labor shortages and the needs of these civilian services are reflected in the newspaper advertisements for workers. A cross section of these columns throughout the country tells a story that is strikingly similar and reveals near-desperation on the part of many employers and an effort to "glamorize" the more humble jobs by offering special inducements. Among these inducements are a chance to work for a superior company, with good or ideal working conditions; a 48- or 40-hour week, with Saturday afternoons off and no Sunday work; unusually good pay, with bonuses or commission; paid vacations; pay while learning; rapid promotion; permanent employment; in short, a real career. In some areas there is a definite appeal to the patriotic motive. Recruitment of all types of workers—men and women, white and Negro, any age from 16 to 65, for part-time or full-time work—seems to be the aim of many of the "ads."

Post-War Problems and Possibilities

Even while war is being waged, and before the end is in sight, a common question is, What will become of all the woman workers in the post-war period? The frequency and implication of this query are cause for concern. The approach to this question indicates little differentiation between the approximately 13 million women in the labor force prior to the war and the several million added since. As a matter of fact, however, it will not be possible to keep two separate accounts, one for the regular and one for the emergency workers, in a transitional period of demobilization of troops, curtailment of war manufactures, retooling of plants to peacetime production, and development of new industries and services. Therefore, careful planning for woman workers in general and in relation to the whole labor force and the national economy is imperative.

The necessity for such planning in advance of the cessation of hostilities is indicated by the attitudes and the events following the armistice of November 1918. The situation was discussed by the Director of the Woman in Industry Service of the U. S. Department of Labor at the conference of the American Association of Governmental Labor Officials on December 28, 1918.[5] Briefly, her report called attention to the fact that despite the national importance of women's work, their willingness to respond to the call of industries and services, their efficiency along all lines, reaction had set in and its forces were affecting the status of woman workers. Certain labor organizations (upheld in one case by the National War Labor Board of that period) as well as various public speakers took the view that women who entered industry during the war should relinquish their jobs in the post-war periods. The attitude was due to men's fear of unemployment and fear that wage cuts might result for them because of the availability for jobs of lower-paid women who might be kept on while returning soldiers would search in vain for work.

The Director of the Woman in Industry Service stressed the fact that the way out of the dilemma was a united attack on the cause of the fears, and made the following suggestions and comments:

> The strengthening of labor exchanges * * * a wise extension of agencies of adjustment and these can be successful only insofar as they derive their strength from real collective bargaining. * * * It is the absence of these agencies of adjustment which makes the present situation so strained. * * * Labor legislation must meet the test of the new spirit while it busies itself with specific gains very necessary for workers in industry. * * * It is not difficult to prophesy that the problem of labor legislation just ahead is not the formulation of concrete aims but the development of a new spirit and method in administration. Two aims for labor legislation for women workers may be emphasized as of immediate importance. They are the enactment into law of the 8-hour day and the fuller representation of women in important positions in administration of labor laws.

This official had also pointed out that "the problem is not one of withdrawal of any group of workers voluntarily but rather the organization of industry in such a way as to utilize to the full all of the available working forces of the country," and "for women in industry the chief danger is that they will remain in certain industries or be introduced into new ones at a lower wage scale than is paid to the men. * * * The war has demonstrated that the range of possibilities for efficiency by women in industry is much larger than has been assumed in the past. This is notably illustrated in the work of women in machine processes." [6]

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[5] Data are from material in the files of the Women's Bureau, U. S. Department of Labor.

Many of the above recommendations have become definite factors in the present situation and influential in shaping the future situation for women. In the field of labor legislation, progress has been made in recent years, on both the State and Federal levels, to place a floor under wages and a ceiling on hours, with quite extensive provision for the 8-hour day in spite of temporary relaxation of this standard in some quarters to meet war emergencies. These better legal standards, so generally lacking 25 years ago—and still not Nation-wide in application—will help to bolster women's status in the post-war transition period. A larger share also is now taken by women in the administration of both Federal and State legislation to promote the welfare of workers. A network of public employment offices serves both men and women, and the social security system offers protection against the hazards of unemployment and old age—bulwarks that will be strengthened in the near future if plans now formulated are carried out. Likewise, collective bargaining is now an effective instrument in the hands of a substantial and growing number of woman wage earners; today over 3 million women are found in the ranks of organized labor.

USE OF NEW SKILLS

Another factor that will prove of decisive importance in the adjustment of women as well as men, in the reconstruction period, is the special training received by many persons as a result of the war. It is true that during World War I there was a training program to meet both industrial and military needs, in fact, the Federal Board for Vocational Education was created in 1917; but the kinds and extent of training at that time have been far outstripped by the present program. Though the vocational-training opportunities open to women during the two decades before World War II gave them practically no preparation for their work in the present war effort, and though from the special vocational-training system created as part of the defense program women derived only slight benefit, since then statistics tell an impressive story for women. By June 1943, almost 480,000 women had had preemployment courses and over 300,000 had taken supplementary courses given by the Vocational Training for War Production system. By May 1943, another 140,000 women had taken advantage of the short Engineering, Science, and Management War Training courses, now given free in some 200 colleges and universities. Many hundreds of women have been given technical training by the Signal Corps, Army Air Service, Army Ordnance, the navy yards, and other Government agencies. Countless women have participated in the training-within-industry program for upgrading workers and preparing them to become job instructors, and also in the extensive training programs of plant managements which have given specialized but simpler in-plant training. More unusual are the arrangements, made with certain educational institutions by some industrial establishments, to give training at company expense to promising young college women, for positions as draftsmen, technicians, engineering aides, aeronautical engineers, etc.

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[6] Life and Labor (National Women's Trade Union League), December 1918 (p. 272).

Altogether, as a result of such training programs a goodly proportion of women have acquired skills that will be needed by many enterprises in the coming years. In this connection must be considered the excellent and truly amazing training that some millions of service men have received in this mechanized and highly technical warfare of land, water, and air forces. The men's new skills will serve as valuable qualifications in their post-war reemployment. Despite the Selective Service Act guaranty to demobilized servicemen of their pre-war jobs when circumstances permit, many will prefer other fields more closely allied with their war training. Already, new developments—radar, electronics, plastics, global airlines, world plans for rehabilitation, superhighways—are discernible, which seem to present alluring opportunities for thousands of specially trained men and women. Many workers, especially women, will be absorbed by a rapid and probably phenomenal expansion in consumer-goods manufacture to help replenish depleted stocks the world over.

EQUAL PAY FOR EQUAL WORK

One other vital factor calls for a brief discussion—the principle of equal pay for women. In fact, whenever men and women may be in competition for jobs the essential factor for preventing injustice to either sex in wartime or peacetime is that women be paid the same wage rates as men for comparable work. From its beginning in World War I the U. S. Women's Bureau has urged consistently that wages be based on occupation and not on sex.

The question of equal pay became a very definite issue 25 years ago when, as now, women were taking over jobs left by men called to the front. Recognition of the principle was given by the National War Labor Board of that time through its application in 50 of the cases that came before it, but there were numerous instances of inequality in pay.

Greater gains, and it is to be hoped more lasting ones, seem to have been achieved in the present emergency. Though the beginning of World War II found the double wage standard largely prevailing, considerable impetus has been given by industry, Government, and labor to the extension of the equal-pay principle with the large-scale replacement of men by women. As noted, two of the key war industries (aircraft and shipbuilding) employing large numbers of women, and to great extent in place of men, generally pay women the same rates as men, when on identical or comparable jobs, and also the same entrance rates for new and inexperienced workers. In the other war industries surveyed by the Women's Bureau, four-fifths of the plants paid for the job regardless of sex and four-fifths started inexperienced men and women at the same rate.

The present National War Labor Board has taken several important steps to promote a widespread adoption of the equal-pay principle. In a number of important cases the Board has ordered employers to put the equal-pay principle into effect in their plants. The Board also issued its Order No. 16, which permits employers voluntarily to make adjustments to equalize the wage or salary rates of women with rates paid men for comparable work, without prior approval by the Board.

Thus, labor unions are given full opportunity by the Government to have an equal-pay clause written into their contracts. The general attitude of organized labor is manifested in the endorsements of the policy by both the American Federation of Labor and the Congress of Industrial Organizations after the United States entered the war. Some unions forged ahead immediately in this matter. The stand of the War Labor Board, plus efforts made by the Women's Bureau, has stimulated other union activities in this direction. Current and comprehensive data are not available, but several months ago it was revealed that the United Electrical, Radio and Machine Workers had entered into some 150 signed agreements having an equal-pay clause and covering at least 800 factories. The United Rubber Workers had negotiated about 142 contracts, and the United Automobile, Aircraft, and Agricultural Implements Workers probably 50, with a similar clause. Definite progress in the requirement of the same wage rates for women as for men also has been made by some of the American Federation of Labor unions.

Other aspects that must be considered in the post-war program for women were pointed out recently by the Director of the U. S. Women's Bureau:

> There are two realistic approaches to the problem (as to future developments for the 18 million women, or so, employed in the war period). First, a large number of these women do not expect to continue in paid work. Like their men in the armed forces many women consider their present employment a patriotic duty. They know with the coming of peace their special work will be over. Automatically they will return to their regular business of homemaking.
>
> But there is another inescapable side to the story. For decades in this country millions of women have had to earn their own living, and many also have had to be the total or partial support of dependents. As a result of the war women's wage-earning responsibilities will be greatly increased. A large number of women in all types of positions will have to continue to take the place of men—to take the place as breadwinners of men who fail to return or who come back incapacitated from the battle fronts.

The Women's Bureau is giving attention to post-war plans and possible developments for woman workers, realizing that their employment is complicated by issues distinct in a number of respects from those pertaining to men. Special consideration is imperative not only to guarantee full employment opportunities to women in the transitional period and to prevent undue unemployment difficulties and unfair discrimination against them, but also to dovetail all such questions with the post-war program that will be evolved for men.

○

U. S. Department of Labor
WOMEN'S BUREAU
Washington December 2, 1943

Proportion of Women Wage Earners to Total Wage Earners in Selected War Industries - June-September, 1943.

Industry	Percent women wage earners -			
	June	July	August	September
Ordnance, Total 1/	29.0	31.2	32.0	32.4
Guns & Mounts, 20-MM & above	12.5	14.6	14.7	16.1
Guns & Mounts, below 20-MM	32.5	35.8	36.1	36.4
Artillery ammunition	37.3	39.5	39.4	39.5
Small arms ammunition	47.5	46.6	46.6	46.6
Ammunition loading & assembly	37.9	46.7	44.4	44.5
Combat tanks & parts	11.5	13.3	15.3	17.2
Fire control instruments	36.7	38.5	38.7	38.8
Iron and Steel Products, Total 2/	23.3	23.6	24.6	24.8
Nonferrous Metal Products, Total 1/	40.7	43.6	44.7	44.4
Jewelry, silverware & plated ware	46.1	45.4	45.5	43.3
Watches and clocks	56.5	57.7	58.9	59.2
Electric Machinery, Total 1/	46.4	45.6	46.1	46.5
Electric motors & generators	36.7	37.4	37.6	37.5
Radio & radar	53.8	50.1	50.8	51.5
Radio Tubes	79.0	79.7	74.5	74.4
Communication equipment, NEC	51.4	51.9	50.8	52.5
Machinery (Except Electrical), Total 1/	15.4	15.6	16.4	16.9
Machine tools	9.5	9.8	10.1	9.8
Transportation Equipment, Total 1/	18.3	20.9	22.1	20.9
Airframes	38.0	37.9	38.4	38.8
Engines, aircraft	23.0	24.7	26.3	27.7
Propellers	19.9	20.3	20.4	19.8
Gliders	23.9	24.6	24.9	25.0
Aircraft accessories & misc. equip.	39.0	32.8	32.7	33.7
Aircraft instruments	41.1	39.9	39.9	41.0
Ship & boat building & repairing	7.2	8.0	8.8	9.4
Miscellaneous Industry				
Professional & Scientific Instr.	32.1	37.6	36.6	35.9
Surgical, medical & dental equip	47.3	46.9	44.2	43.6
Optical instruments & lenses	54.0	47.7	59.6	60.6

1/ Only major industries shown in the break-down.

Source: W.P.B.

2/ This industry shows a range of from 9.4 to 51.3 percent women wage earners in the 17 individual industries in this classification.

Occupations
Salvage

Copy

UNITED STATES EMPLOYMENT SERVICE
of the
WAR MANPOWER COMMISSION

11 West 42nd Street
New York 18, New York
October 26, 1943

Office of the
Director for
New York

Miss Mary Anderson
Director
Women's Bureau
U. S. Department of Labor
Washington, 25, D. C.

Dear Miss Anderson:

We are very glad to answer your questions regarding the articles which recently appeared in the New York Times and a number of other daily newspapers in the city, announcing the need for women to work on salvage clothing. The furnishing of clothing to the civilian population of occupied countries is a huge project carried on under the State Department. This clothing is being distributed by the United Nations Relief and Rehabilitation Committee (formerly the Office of Foreign Relief and Rehabilitation Operations, headed by Governor Herbert H. Lehman). Purchases are being made with funds from the Lend-Lease Administration. The salvage work is being done by private firms under contract to the Procurement Division of the United States Treasury Department. These include a few domestic dealers, but mostly exporters who formerly did business with India, China, and South America, as well as other parts of the world where useable but out-of-style clothing might sell for small amounts.

The women engaged by these companies work in factories or warehouses which are concentrated in the lower part of Manhattan. None of the work, as far as we know, is being done in homes. No applicants have been referred to home work by the Employment Service. The contractors are under the same regulations as to government inspection as are manufacturers of uniforms or other war products.

The rates of pay for the sewing work done by these women conform to the minimum set by the Regional War Labor Board, which is 50¢ an hour. This rate is paid those experienced in hand sewing who have had no previous factory experience and the work is an opportunity for women who have done only home sewing. Most of the employees who do machine and hand sewing are women while men are used for the heavier jobs.

You might be interested to learn that the total response to the publicity given this call for women was nearly 500. These were mostly housewives and older women about one-half of whom are interested only in home work or part time work. Most of those available for full time factory work have already been placed.

Attached please find a list of employers who placed orders with our office.

Very truly yours,

/s/ W. C. Cameron Edey
Metropolitan Director

WCCE:IN
Enclosure

712 HAS RECEIVED ORDERS FROM THESE SALVAGE FIRMS

	NAME OF FIRM	ADDRESS
1.	Associated Export Co.	224 Centre Street, N.Y.C.
2.	Dadourian Export Co.	25 Elizabeth Street, N.Y.C.
3.	Hampar & Co.	195 Mercer Street, N.Y.C.
4.	Military Salvage Repair Co.	889 Broadway, N.Y.C.
5.	Adept Mercantile Trading Co.	242 South Street, N.Y.C.
6.	I. Freiberg & Sons, Inc.	320 E. Houston Street, N.Y.C.
7.	Manhattan Military Supply Co.	478A Water Street, N.Y.C.
8.	Mid Southern Trading Co.	9 Hester Street, N.Y.C.
9.	South Trading Co.	195 South Street, N.Y.C.
10.	Garvin	26 Elizabeth Street, N.Y.C.
11.	Joses Shop	100 11th Avenue, N.Y.C.
12.	Zipper Service	19 West 34th Street, N.Y.C.
13.	Aviation Fur Cleaning	144 West 27th Street, N.Y.C.
14.	Manoog Hadshian	82 Rutgus Slip, N.Y.C.

Rec Nov 20-1943

WOMEN'S BUREAU
U. S. Department of Labor
Washington

THE OYSTER-SHUCKING INDUSTRY ALONG DELAWARE BAY IN NEW JERSEY

October 1943

The Industry
Employment
Occupations
Working Conditions
Wages
Hours
Housing
Community Needs
Recommendations

The Industry.

In the last week of October an agent of the Women's Bureau of the U. S. Department of Labor visited the center of the oyster industry that is on the Maurice River, a tidal river in southern New Jersey on Delaware Bay. Three shucking houses were inspected and interviews had with owners and managements.

The shucking industry in New Jersey, as distinct from growing, is only 10 or 12 years old; before that, the oysters were shipped in their shells.

The oysters are grown in the bay in State-owned or privately-owned beds. Private owners are allowed, on payment of taxes and license fees, to transplant seed oysters to their own beds from those belonging to the State. In most cases the shucked oysters are sold to the Government, this being done on a bid rather than a contract basis. Some of the shells also are sold to the Government; others are sold for lime in chicken feed; and large quantities are required to line the oyster beds, the oyster spawn attaching itself to such shells.

Oysters take from about two to five years to grow large enough for eating, during which time they must be dug up occasionally, freed from pests, and replanted. This work is done in May and June from boats owned by the planting companies and manned by planters' employees, many of whom work for the shucking companies in the shucking season, which begins September 1.

Employment

Before the present war there were usually about 1,800 men and women laborers in the oyster industry in this vicinity. In the season of 1943 there are only about 700. The three companies scheduled have about 225 workers instead of the 500 employed in most years: this shortage affects only two of them, the smallest company having its usual quota, recruited by the foreman from local dependable sources. The two other companies have respectively 40 percent and 25 percent migrants, from New Jersey, Maryland, and in one company also Delaware and Virginia. Practically all the workers - 95 to 100 percent - are Negroes, and, varying somewhat by company, 30 percent to 50 percent are women.

Before the shucking industry was set up in this locality most of the oyster workers were migrants. In recent years, however, they have tended to make their homes here. Just before the United States entered the war it was estimated that only about 20 percent of the workers round Port Norris - the center of the general locality - were migrants; in the plants surveyed in October the proportion was about 26 percent. The shucking operations offer employment from September to the end of April, in May and June there is work for men at planting oysters, and farms and canneries have openings in the summer.

Medical examinations are given to applicants for employment and no one with tuberculosis or venerealdisease may work in the shucking houses unless they take treatment for their condition. All the workers, in all shucking houses, are members of United Oystermen's Union (A. F. of L.)

Occupations.

In the shuck house the oysters are piled on high tables, at which the workers stand in individual stalls on platforms several inches above the floor. Some workers break the oysters open with a short iron bar and take the meat out with a knife; others use only a knife. The meats are dropped into pails of cold water, filled from spigots in the room by the shuckers themselves. This break involves a slight loss of time (all shucking is piece work) but provides a desirable rest and change of position. The shucking is done at top speed, and is accompanied by loud and continuous conversation above the noise.

After the shucking, the oysters are carried to a man who dumps them on a large perforated tray for thorough washing. They are then put into kettles of water through which air is blown, making the contents bubble and foam. This serves not only to cleanse the outside of the oysters but causes them to regurgitate, thus cleansing their insides. The oysters are graded, packed raw in sterile cans, and shipped in ice.

Working Conditions.

Most of the shuck houses are shed-like buildings on marsh land along wharves. They have cement floors built to drain more or less well but in most cases not draining successfully. It is customary for the shuckers to drop their empty shells on the floor, the day's accumulation adding to the appearance of dirt and disorder as well as increasing the wetness and hazards of walking. In one house visited, wire baskets are provided for the shells and are carried away when full; cleaners keep shells picked up and the floors swept. Aisles are wider here. Further, the workers' stalls have metal sides, off which the water drains instead of soaking in as it does in the case of wood.

The houses are cold, damp and unheated, poorly ventilated, the workers wear warm clothing, rubber or waterproof aprons, and heavy rubbers or boots; women wear caps or scarves. Most of the workers wear a glove on one hand and finger stalls on the other. These accessories and their knives are furnished by the workers to avoid possible deductions in pay if provided by the employers.

Lighting is poor in two of the plants visited, good in the other. There are no seats; the workers say they prefer to stand, since there is much reaching and they maintain a sort of rhythm in their work. There are, however, no seats for those who take their lunches (most of the workers go home); nor are there any rest-room facilities. Each house has a first-aid kit, in fairly constant use for the care of cuts. Hot and cold running water are available in the workrooms and soap and towels are supplied. In some cases individual drinking cups are provided.

Toilet facilities, controlled by the Delaware Bay Sanitary Commission, are built high on stilts over septic tanks and so far away as not to contaminate the oysters. The workers must go some distance, out of doors in all kinds of weather, sometimes wading, to reach the toilets furnished by the Commission. The toilet inspected by the Women's Bureau agent was in only fair condition.

Wages.

As before stated, all shucking is paid on a piece-rate basis. The union contract under which all workers in the industry are employed provides for the use of a cup or measure with a capacity of 8 liquid United States pints. The present rate of pay to all shuckers, men or women, is 50 cents for each 8-pint measure of shucked oysters.

Women are employed only as shuckers; they make around $6 a day. All "test openers" are men, and they are paid 5 cents extra for each 8-pint measure. The so-called skilled jobs - dipping, skimming, packing, and so forth - are held by men, who get not less than $50 a week. Shell wheelers and oyster carriers are paid 75 cents an hour.

Hours.

All shucking houses operate an 8-hour day, to be worked between 6 or 6.30 a. m. and 5 p. m. Beginning and quitting hours of individual workers are very irregular. Some women do not go to work until after getting their children off to school; some take time to prepare lunch for the family, others take only 15 minutes. As all women are on a piece-rate basis, actual hours may be a matter of personal choice without affecting other employees. The houses work a $5\frac{1}{2}$-day week.

Housing.

The workers live in company owned or controlled houses or in their own or rented homes in the vicinity. Many of the permanent families raise pigs and keep a few chickens. The housing on company property is, like the shuck houses, on marsh land filled in by oyster shells and earth. The quarters generally are one-, two-, or three-room shacks built in long rows on stilts that raise them a little above ground level. There are some two-story houses for one or more families.

There is no drainage system; in rainy weather the houses stand in water and on occasions of specially high tides it may enter the rooms. Occupants of the shacks were seen emptying dishpans and even toilet conveniences on the ground outside their doors. The septic-tank toilets provided for the shuck houses, already described, are the only facilities available to families. On the day of inspection, a rainy one, a man in rubber boots was seen going from his home to the toilets, wading through water well above his ankles.

Many houses are roofed with tar paper, and all look leaky and in poor repair. There is no running water; all must be carried from community pumps. Only a few houses have electric lights; installation costs are said to be prohibitive, so kerosene lamps are used, constituting a hazard in places already firetraps. Cook stoves burn wood fuel. Most of the shacks have screens, though not in repair; mosquitoes are "terrible" in the summer, and practically nothing has been done in the way of control.

Community Needs.

There is great need for a social and recreational program for these people. There are practically no facilities. A few years ago a public school was built for children of grammar-school age in one settlement. The playground there is very poor. The Methodist church for colored people competes with the liquor hang-outs and the minister is doing a wonderful social-religion job. He works in a glass factory in the town in which he lives, and comes to the oyster community, 18 miles distant, twice a week. He has a men's club of 175 members and has done much to encourage these people to have higher standards but he has so little time to give, and even less money. The New Jersey Church Committee on Migrant Work maintained a child-care center in one of the towns for several years. The building and equipment were poor and the financial support was not adequate, so the Committee had to abandon it temporarily.

People interviewed in the survey, besides the owners of the shucking houses, were officers of the Consumers' League of New Jersey, the New Jersey Church Committee on Migrant Work, and the Union; the Methodist minister and his wife; and a number of employees.

Recommendations.

Working conditions:

If the work must be done standing, as was stated, the hour schedule should not be lengthened. Present flexibility in hours of homemakers should be maintained.

Plant housekeeping should be improved, especially as to floors, ventilation, lighting.

A separate room, with chairs and tables, should be provided for the use of employees who do not go home for lunch.

A sewerage system with sanitary flush toilets convenient to the work places should be required by law.

Housing conditions:

Sanitary drainage is of first importance.

The inferior housing should be condemned and new houses built, convenient to the shuck houses but on higher ground. They should have flush toilets, shower baths, at least hot and cold water, electric lights, and so forth.

The houses at other locations, though on higher ground and better in other ways, also should be brought up to decent standards. (Politics, vice interests, race prejudice are blamed for the failure of past efforts to improve the housing.)

A social and recreational program for the people should be worked out. Present activities should be given support, past efforts revived.

Though serious enough in the case of migrants, bad housing is doubly so where a permanent work force is concerned. It would appear that here is an opportunity for the development of a responsible employee-tenant group that should prove a decided asset to the future of the oyster-shucking industry.

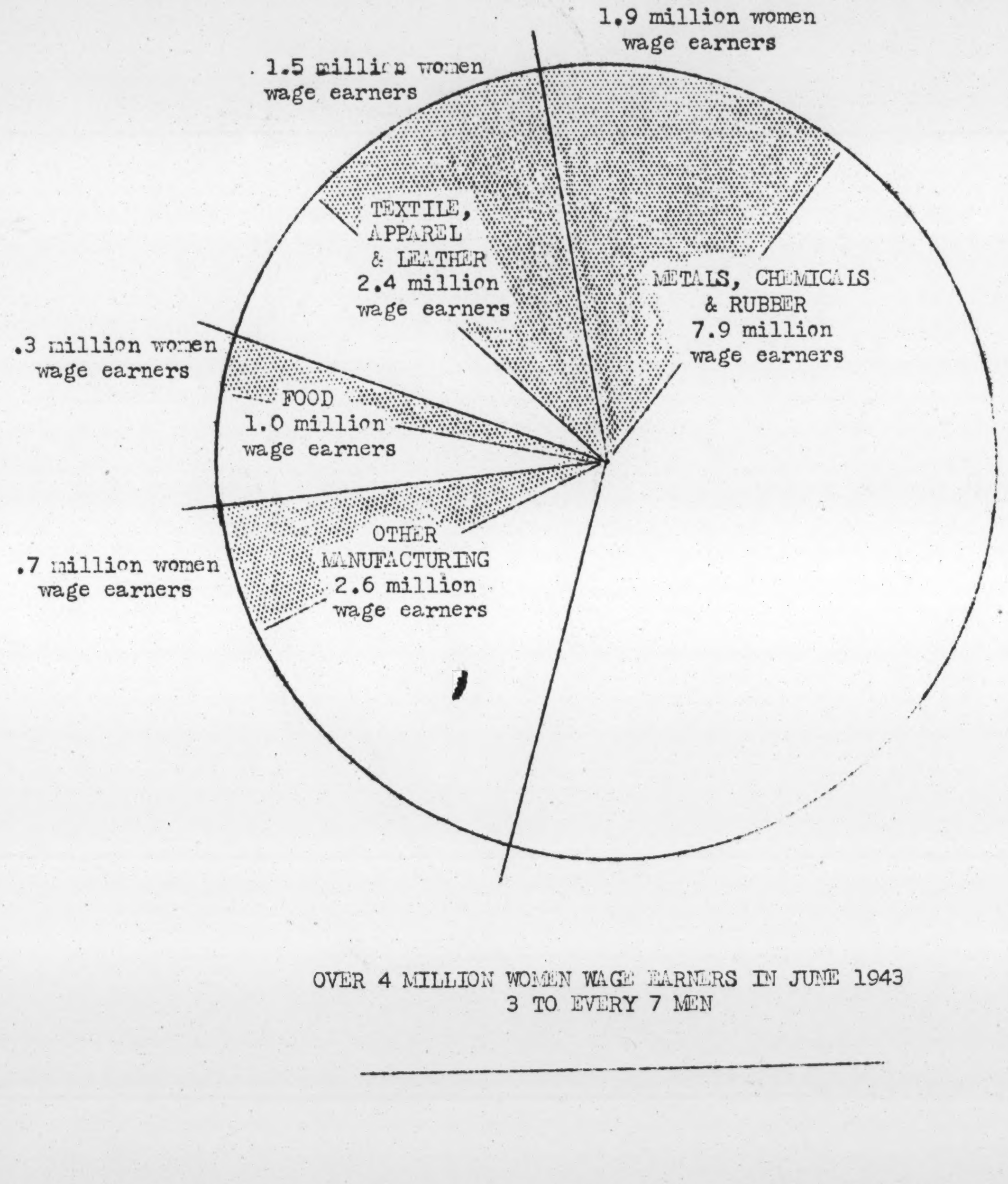
MVR

For release
Monday August 30, 1943

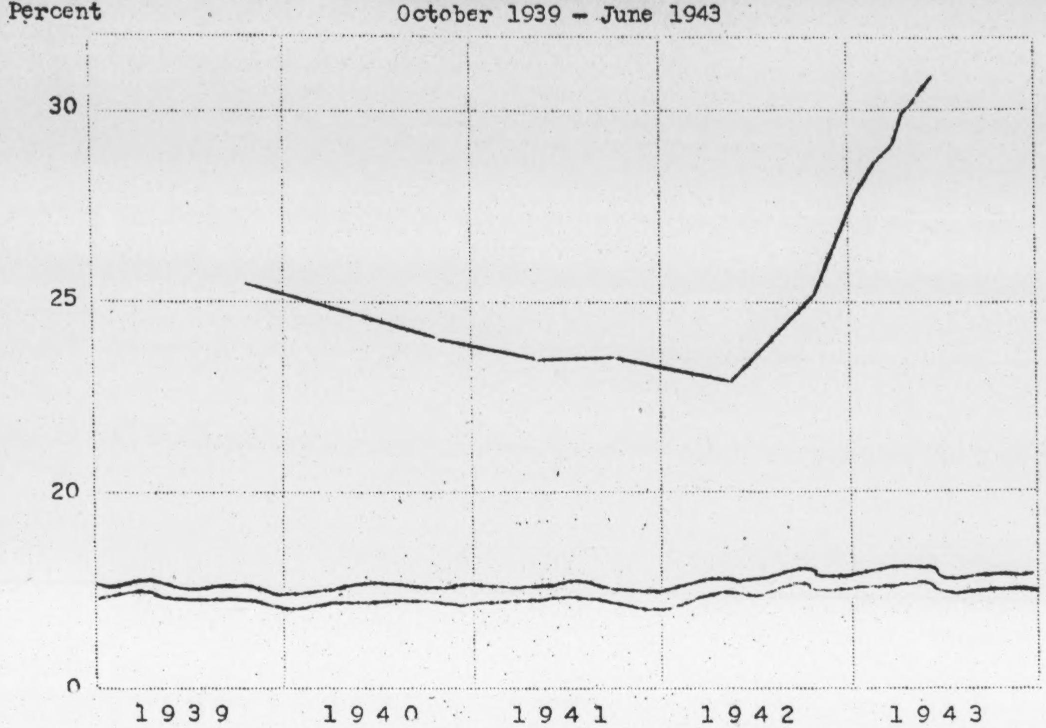
U.S. Department of Labor
Bureau of Labor Statistics
Employment and Occupational Outlook Branch
Employment Statistics Division

WARTIME EMPLOYMENT OF WOMEN
IN
MANUFACTURING INDUSTRIES

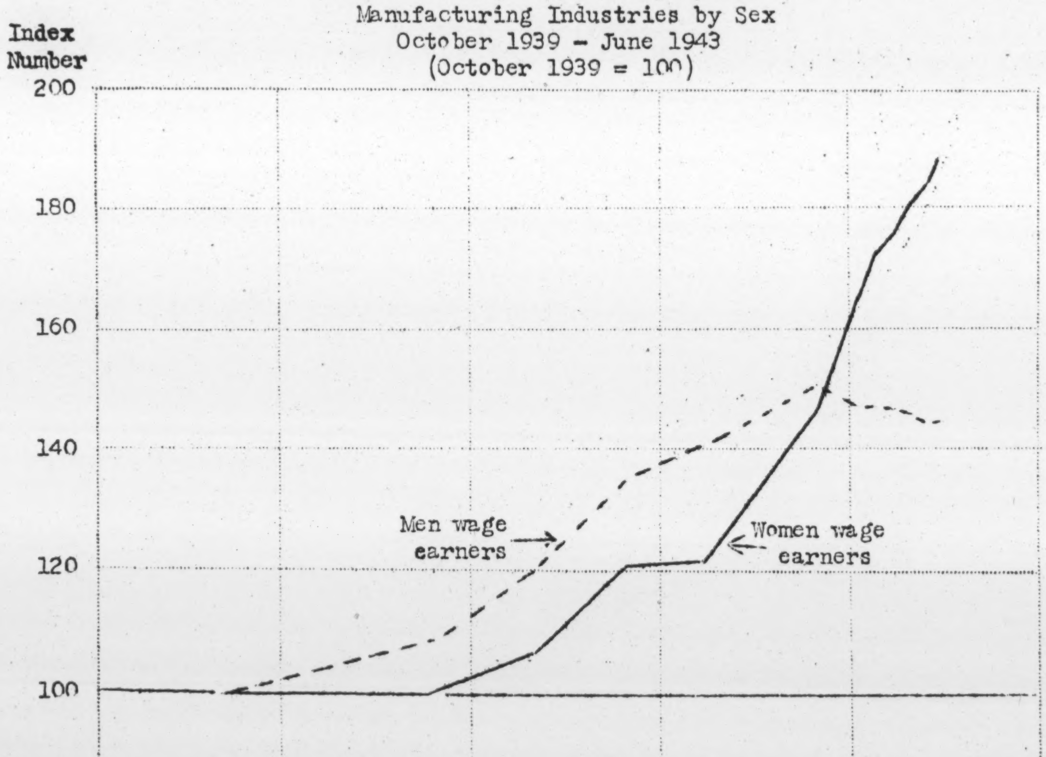
June 1943



OVER 4 MILLION WOMEN WAGE EARNERS IN JUNE 1943
3 TO EVERY 7 MEN



Percentage of Women Wage Earners in
Manufacturing Industries
October 1939 - June 1943



Indexes of Wage Earner Employment in
Manufacturing Industries by Sex
October 1939 - June 1943
(October 1939 = 100)

"Since the spring of 1942 more than four fifths of the net addition to the working force in American factories have been women," Secretary of Labor Frances Perkins announced today. "Wartime industrial expansion resulted in an increase of 2 million women in manufacturing industries since October 1939 as compared with an increase of 3 million men. This brought the total number of women wage earners in June 1943 to over 4 and a quarter million or 30 percent of all wage earners", she said in releasing a comprehensive report on the employment of women compiled by the Bureau of Labor Statistics.

While well pleased with this large increase in women in the working force, the Secretary said "even more women must take their place on the assembly lines, as full-and part-time employees filling the gaps caused by men entering the armed services. Since October 1942 the actual number of men in manufacturing industries has been decreasing".

In June nearly 2 million women were engaged in the production of basic war materials, actually turning out the planes and implements of war for the use of the armed forces. Almost as many, or 1,454,500 women wage earners, are in the textile, apparel, and leather industries where uniforms, shoes, tents, and other secondary war products are produced. These latter industries are traditionally large employers of women. There were 262,100 women in the vitally important food industri

During the initial stages of war expansion, while there was an adequate supply of male labor, the manufacturing industries hired men preponderantly. From October 1939 to April 1942, the net addition of wage earners was 3,134,000 of which only 484,100 or 15.4 percent, were women. As the male labor supply reached exhaustion, the war industries, confronted with the need for expansion in order to meet production requirements, hired women at a rapid rate. From April 1942 to June 1943 the net addition was 1,833,000 of which 83.2 percent were women.

Before the war 85 percent of all women wage earners in manufacturing were in the nondurable goods industries. Comparatively few women had entered the metal and machinery industries. This pattern changed rapidly as the result of two factor first, the rapid wartime growth of durable goods industries relative to nondurable, and second, the fact that the ratio of women to total wage earners increased more rapidly in durable than in nondurable industries. Women in durable goods industrie increased from 340,000 in October 1939 to 1,814,300 in June 1943, an increase of over 400 percent. By June 1943, 58 percent of all women wage earners were in nondurable goods industries, while 42 percent were in durable. It is a striking fact that in both durable and nondurable goods industries, the proportion of women to total wage earners was maintained at a constant level until several months after Pearl Harbor, when the stringent labor market conditions effected the great increas in the number of women hired.

The aircraft, shipbuilding and locomotive group of industries is a striking illustration of the increased utilization of women. Until October 1941 only 1 percent of the labor force in these industries were women. As employment accelerated the proportion of women rose rapidly, reaching 20 percent in June 1943. The actual number of women increased one hundred fold from 4,300 in April 1941 to 466,800 in June 1943.

In the following tables sex ratio data are shown for 132 industries from October 1939 to June 1943. Ratios for October 1939 are derived from the 1939 Census of Manufactures release, "Persons Employed in Manufacturing Establishment By Sex." Data from October 1940 through June 1943 are based upon reports to the Bureau of Lab Statistics from manufacturing establishments. For June 1943, reports were received from approximately 23,000 establishments, employing more than 8 million wage earners this number represents about 3/4 of the establishments which report employment each month and constitutes more than 4/5 of the wage earners in the complete sample.

Each series published is based on a sample covering at least 1/5 of the estimated wage-earner employment for the entire industry. Half the series are based on samples covering 60 percent or more of the estimated wage earner employment; 10 percent on samples greater than 90 percent.

Table 1 - Estimated Employment of Women Wage Earners in Manufacturing Industries by Economic Division, January and June 1943

Economic Division 1/	Women Wage Earners				All Wage Earners (thousands)	
	Number (thousands)		Percent of Total			
	January	June	January	June	January	June
All Manufacturing......	3,766.3	4,275.8	27.9	30.9	13,503	13,821
Metal, Industrial Chemical and Rubber Industries...........	1,438.4	1,858.7	19.4	23.7	7,422	7,858
Basic Metals........	58.5	93.7	5.6	8.9	1,048	1,049
Metal Fabricating...	1,292.5	1,668.1	21.7	26.1	5,965	6,391
Industrial Chemicals	21.3	25.5	9.4	11.1	226	229
Rubber..............	66.1	71.4	36.1	37.8	183	189
Food Industries.......	248.0	262.1	25.7	27.5	965	953
Textile, Apparel, and Leather Industries...	1,473.4	1,454.5	58.5	60.2	2,518	2,416
Other Manufacturing Industries...........	603.5	700.5	23.4	27.0	2,598	2,594

1/ These divisions were derived to distinguish groups of industries of special significance in war-time. They represent combinations of complete industries classified by pre-war product and cannot be considered clear-cut categories.

Table 2 - Estimated Employment of Women Wage Earners in Manufacturing Industries, in Specified Months, October 1939-June 1943

Year and month	Women Wage Earners		All Wage Earners (thousands)
	Number (thousands)	Percent of total	
1939 October 1/	2,268.1	25.6	8,854
1940 October	2,269.9	24.1	9,404
1941 April	2,424.5	23.5	10,310
October	2,743.5	23.6	11,616
1942 April	2,751.2	22.9	11,988
October	3,336.4	25.3	13,166
1943 January	3,766.3	27.9	13,503
February	3,914.9	28.7	13,633
March	4,015.0	29.2	13,727
April	4,111.9	29.9	13,735
May	4,172.1	30.5	13,696
June	4,275.8	30.9	13,821

1/ Derived from data of the 1939 Census of Manufactures - "Persons Employed in Manufacturing Establishments, by Sex", August 1941.

Table 3 - Estimated Employment of Women Wage Earners in Durable and Nondurable Manufacturing Industries in Specified Months, October 1939-June 1943

Year and Month	Women Wage Earners 1/				All Wage Earners (thousands)	
	Number (thousands)		Percent of Total			
	Durable	Nondurable	Durable	Nondurable	Durable	Nondurable
1939 October	340.0	1,928.1	8.6	39.5	3,967	4,887
1940 October	380.5	1,889.4	8.4	38.7	4,525	4,879
1941 April	444.9	1,979.6	8.5	39.1	5,243	5,067
October	517.4	2,226.1	8.6	39.9	6,035	5,581
1942 April	577.4	2,173.8	8.9	39.6	6,500	5,488
October	981.8	2,354.6	13.2	41.3	7,464	5,702
1943 January	1,382.6	2,383.7	17.6	42.4	7,875	5,628
February	1,493.6	2,421.3	18.7	43.0	7,998	5,635
March	1,573.4	2,441.6	19.4	43.4	8,099	5,628
April	1,656.1	2,455.8	20.3	43.9	8,145	5,590
May	1,727.4	2,444.7	21.2	44.2	8,159	5,537
June	1,814.3	2,461.5	22.0	44.2	8,250	5,571

1/ October 1939 derived from data of the 1939 Census of Manufactures, - "Persons Employed in Manufacturing Establishments, by Sex", August 1941.

Table 4. - Number of Women per 100 Wage Earners, by Major Manufacturing Industry Group, in Specified Months, October 1939-June 1943

Industry Group	Oct. 1939 1/	Oct. 1940	Apr. 1941	Oct. 1941	Apr. 1942	Oct. 1942	Jan. 1943	Feb. 1943	Mar. 1943	Apr. 1943	May 1943	June 1943
Durable Goods:												
Iron and steel	6.2	6.7	6.8	7.1	7.9	11.3	14.3	15.5	16.3	17.0	17.7	18.5
Electrical machinery	33.9	32.2	31.9	32.2	33.5	36.0	41.4	43.0	44.4	45.1	46.0	46.1
Machinery, except electrical	5.2	4.9	5.2	6.6	5.9	9.3	15.2	16.5	17.0	17.7	18.3	19.2
Transportation equipment	1.0	.8	.9	1.1	2.7	10.5	16.2	17.1	17.6	18.5	19.2	20.4
Automobiles	6.6	5.7	5.4	4.9	4.8	12.1	15.2	16.2	16.6	18.1	20.0	21.0
Nonferrous metals	13.7	16.1	16.6	16.9	15.3	16.6	18.1	19.0	19.5	20.3	21.1	22.1
Lumber and timber	.9	1.3	1.6	1.7	2.1	5.2	6.5	7.0	8.4	10.4	10.9	11.0
Furniture	10.3	8.5	8.4	9.1	10.3	14.4	19.4	20.7	21.6	23.0	24.6	25.1
Stone, clay and glass	11.1	12.8	13.1	13.7	14.6	16.9	21.4	22.3	23.3	23.6	24.5	24.8
Nondurable Goods												
Textile mill products	43.4	43.0	43.9	44.7	45.1	47.2	48.5	49.0	49.3	50.0	50.3	50.3
Apparel	74.0	75.2	76.1	75.9	76.6	76.8	77.6	77.8	77.9	78.3	78.6	78.8
Leather	40.0	38.4	40.2	40.0	41.7	44.1	47.1	47.7	48.3	48.9	49.2	49.4
Food	28.4	25.8	21.3	28.4	23.7	29.7	25.7	25.8	26.3	27.0	27.3	27.5
Tobacco	66.9	66.9	66.5	68.0	66.8	66.8	66.8	67.2	67.4	67.7	68.6	67.8
Paper	24.0	23.6	23.8	24.7	24.0	25.9	29.2	30.3	30.7	30.8	31.3	31.6
Printing and publishing	17.8	19.8	20.7	22.3	21.6	23.7	25.9	26.6	26.8	26.7	27.0	27.6
Chemicals	14.7	15.4	15.0	16.2	17.8	22.3	27.6	27.7	28.2	29.5	30.2	31.2
Petroleum and coal	.3	.5	.4	.5	.6	.8	2.3	3.0	3.9	4.8	5.2	5.5
Rubber	24.6	25.4	27.8	27.8	28.1	36.2	36.1	36.2	36.6	36.7	37.0	37.8
Miscellaneous	36.6	35.2	34.7	34.3	35.7	38.1	41.1	42.4	42.9	43.9	44.8	44.9

1/ Derived from data of the 1939 Census of Manufactures - "Persons Employed in Manufacturing Establishments, by Sex", August 1941

Table 5. - Estimated Number of Women Wage Earners by Major Manufacturing Industry Group in Specified Months, October 1939 - June 1943
(In thousands)

Industry Group	1939	1940	1941		1942		1943					
	Oct. 1/	Oct.	Apr.	Oct.	Apr.	Oct.	Jan.	Feb.	Mar.	Apr.	May	June
Durable Goods:												
Iron and steel	68.8	81.6	93.2	106.8	124.3	185.1	242.1	265.8	281.3	293.9	304.1	317.8
Electrical machinery	100.3	107.6	131.2	158.6	174.2	219.8	273.7	290.7	307.7	313.4	319.7	323.6
Machinery, except electrical	28.4	31.6	43.0	52.5	62.0	106.3	182.7	201.3	209.6	218.9	227.5	240.2
Transportation equipment	1.8	2.6	4.3	8.0	33.1	193.1	334.9	364.6	384.9	410.9	430.3	466.8
Automobiles	29.5	30.4	31.6	28.3	20.5	69.2	95.9	104.0	107.7	118.2	132.0	142.0
Nonferrous metals	34.9	47.7	55.4	61.7	56.6	65.1	73.8	78.3	80.0	83.4	86.5	91.7
Lumber and timber	4.1	6.2	8.0	10.0	11.6	28.0	31.8	33.5	40.2	49.9	52.2	53.0
Furniture	36.9	30.9	31.6	37.1	39.9	53.2	70.2	75.3	78.6	82.8	87.6	89.9
Stone, clay and glass	35.3	41.9	46.6	54.4	55.2	62.0	77.5	80.1	83.4	84.7	87.5	89.3
Nondurable Goods:												
Textile mill products	527.7	501.4	554.9	584.1	587.7	601.7	617.4	624.8	626.1	627.0	623.2	620.2
Apparel	626.0	628.7	687.9	720.9	729.6	694.3	686.0	697.9	703.4	696.1	678.3	669.8
Leather	139.6	130.6	149.9	151.8	161.1	157.3	170.0	172.0	171.0	169.2	165.8	164.5
Food	263.8	244.3	177.4	298.9	211.6	326.2	248.0	241.5	242.2	245.7	249.5	262.1
Tobacco	64.9	64.2	61.2	66.0	62.1	66.1	64.1	63.2	62.7	63.0	61.7	60.3
Paper	69.4	66.8	71.4	82.4	78.1	77.8	90.2	94.8	96.1	96.1	97.7	100.2
Printing and publishing	59.3	65.9	69.6	78.5	71.4	78.6	86.8	89.9	89.5	88.1	88.8	92.2
Chemicals	46.0	53.1	59.3	74.8	102.4	149.7	194.5	201.1	207.0	219.5	222.6	231.2
Petroleum and coal	.3	.6	.5	.7	.8	1.1	2.8	3.7	4.8	5.9	6.4	6.9
Rubber	33.0	33.8	42.0	45.4	39.9	61.1	66.1	67.0	68.1	68.3	68.8	71.4
Miscellaneous	98.1	100.0	105.5	122.8	129.1	140.7	157.8	165.4	170.7	176.9	181.9	182.7

1/ Derived from data of the 1939 Census of Manufactures "Persons Employed in Manufacturing Establishments, by Sex" - August 1941.

Table 6 - Number of Women per 100 Wage Earners in Manufacturing Industries and Groups in Specified Months October 1939 to April 1943

(a indicates "less than 1"; x indicates "not available")

Industry Group or Industry	Oct. 1939 1/	Oct. 1940	Apr. 1941	Oct. 1941	Apr. 1942	Oct. 1942	Apr. 1943
ALL MANUFACTURING	25.6	24.1	23.5	23.6	22.9	25.3	29.9
DURABLE GOODS	8.6	8.4	8.5	8.6	8.9	13.2	20.3
NONDURABLE GOODS	39.5	38.7	39.1	39.9	39.6	41.3	43.9
IRON AND STEEL AND THEIR PRODUCTS	6.2	6.7	6.8	7.1	7.9	11.3	17.0
Blast furnaces, steel works and rolling mills	1	1	1	1	1	1	5
Gray-iron and semi-steel castings	1	x	x	x	x	x	6
Malleable-iron castings	4	x	x	x	x	x	8
Steel castings	a	a	a	a	a	1	6
Cast-iron pipe and fittings	a	a	a	a	a	1	2
Tin cans and other tinware	28	29	30	32	31	34	39
Wire drawn from purchased rods	11	7	9	9	9	13	19
Wirework	22	22	21	21	20	22	28
Cutlery and edge tools	28	27	21	22	26	29	31
Tools (except edge tools, machine tools, files and saws)	11	10	10	10	10	13	20
Hardware	23	26	27	27	28	30	35
Plumbers' supplies	5	5	5	6	6	11	18
Stoves, oil burners and heating equipment not classified	3	3	4	4	5	13	25
Steam and hot-water heating apparatus and steam fittings	6	7	7	7	8	15	22
Stamped and enameled ware and galvanizing	23	21	21	23	22	25	34
Fabricated structural and ornamental metalwork	a	a	a	a	1	4	7
Bolts, nuts, washers and rivets	14	14	13	14	15	18	26
Forgings, iron and steel	a	1	1	1	a	1	11
Screw-machine products and wood screws	12	13	14	18	24	26	32
Steel barrels, kegs and drums	11	x	x	x	x	13	23
Firearms	5	4	3	7	8	17	24
ELECTRICAL MACHINERY GROUP	33.9	32.2	31.9	32.2	33.5	36.0	45.1
Electrical equipment	17	23	24	24	26	29	39
Communication equipment	58	x	55	55	56	56	59

Table 6 - Number of Women per 100 Wage Earners in Manufacturing Industries and Groups in Specified Months October 1939 to April 1943 Cont'd

(a indicates "less than 1"; x indicates "not available")

Industry Group or Industry	Oct. 1939 1/	Oct. 1940	Apr. 1941	Oct. 1941	Apr. 1942	Oct. 1942	Apr. 1943
MACHINERY, EXCEPT ELECTRICAL	5.2	4.9	5.2	5.6	5.9	9.3	17.7
Machinery and machine-shop products	4	4	5	5	6	10	19
Engines and turbines	2	1	1	1	1	4	12
Tractors	1	1	a	a	a	1	8
Agricultural machinery, excluding tractors	1	1	1	1	1	2	7
Machine tools	a	1	1	1	2	5	12
Machine tool accessories	3	5	5	4	6	12	20
Textile machinery	4	4	4	4	5	9	17
Pumps and pumping equipment	6	x	3	4	4	7	12
Typewriters	32*	33	35	36	35	36	39
Cash registers, adding and calculating machines	16*	18	20	21	21	24	32
Washing machines, wringers and driers, domestic	4	5	6	7	9	22	31
Sewing machines, domestic and industrial	12	12	13	14	16	24	29
Refrigerators and refrigeration equipment	9	8	10	9	10	13	26
TRANSPORTATION EQUIPMENT, EXCEPT AUTOMOBILES	1.0	.8	.9	1.1	2.7	10.5	18.5
Locomotives	1	a	a	a	a	1	2
Car building, electric and steam railroad	1	1	a	a	1	1	6
Aircraft and parts, excluding aircraft engines	1*	1	1	2	6	26	37
Aircraft engines	1*	1	1	1	4	12	27
Shipbuilding	a	a	a	a	a	1	6
Motorcycles, bicycles and parts	10	13	16	14	17	17	25
AUTOMOBILES	6.6	5.7	5.4	4.9	4.8	12.1	18.1
NONFERROUS METALS AND THEIR PRODUCTS	13.7	16.1	16.6	16.9	15.3	16.6	20.3
Smelting and refining, primary, of nonferrous metals	a	a	a	a	a	a	2
Alloying and rolling and drawing	7	7	9	9	10	13	17
Clocks and watches	48	49	47	48	48	52	51
Silverware and plated ware	22	24	25	26	23	26	33
Lighting equipment	26	23	26	24	23	24	29
Aluminum	10	8	7	5	4	6	12

Table 6 - Number of Women per 100 Wage Earners in Manufacturing Industries and Groups in Specified Months October 1939 to April 1943 Cont'd

(a indicates "less than 1"; x indicates "not available")

Industry Group or Industry	Oct. 1939 1/	Oct. 1940	Apr. 1941	Oct. 1941	Apr. 1942	Oct. 1942	Apr. 1943
LUMBER AND TIMBER BASIC PRODUCTS	.9	1.3	1.6	1.7	2.1	5.2	10.4
Sawmills and logging camps	1	1	1	1	2	5	9
Planing and plywood mills	3	3	2	2	3	8	15
FURNITURE AND FINISHED LUMBER PRODUCTS	10.3	8.5	8.4	9.1	10.3	14.4	23.0
Mattresses and bedsprings	18	15	16	16	17	28	33
Furniture	6	6	7	8	8	13	22
Wooden boxes, other than cigar	8	7	7	8	9	14	23
Caskets and other morticians' goods	20	18	17	17	17	17	22
Wood preserving	a	a	a	a	a	1	3
STONE, CLAY AND GLASS PRODUCTS	11.1	12.8	13.1	13.7	14.6	16.9	23.6
Glass and glassware	18	19	18	19	20	21	30
Cement	a	a	a	a	a	1	2
Brick, tile and terra cotta	3	5	5	6	5	3	7
Pottery and related products	32	31	32	34	37	38	43
Gypsum	a	a	a	a	a	a	11
Wallboard, plaster (except gypsum) and mineral wool	1	1	1	1	1	6	16
Lime	a	a	a	a	a	a	1
Abrasive wheels	16	13	14	14	14	27	37
TEXTILE-MILL PRODUCTS AND OTHER FIBER MANUFACTURES	43.4	43.0	43.9	44.7	45.1	47.2	50.0
Cotton manufactures, except small wares	38	37	39	40	40	43	45
Cotton small wares	53	50	52	55	57	59	62
Silk and rayon goods	50	50	52	49	52	54	58
Woolen and worsted manufactures, except dyeing and finishing	41	40	42	43	42	44	47
Hosiery	61	60	60	61	62	63	67
Knitted cloth	38	48	46	43	45	48	51
Knitted outerwear and knitted gloves	76	74	74	76	78	81	80
Knitted underwear	76	73	74	75	74	76	78
Dyeing and finishing textiles, including woolen and worsted	17	18	18	21	21	23	28
Carpets and rugs, wool	31	29	30	31	30	31	37
Cordage and twine	33	32	31	31	32	38	43

Table 6 - Number of Women per 100 Wage Earners in Manufacturing Industries and Groups in Specified Months October 1939 to April 1943 Cont'd

(a indicates "less than 1"; x indicates "not available")

Industry Group or Industry	Oct. 1939 1/	Oct. 1940	Apr. 1941	Oct. 1941	Apr. 1942	Oct. 1942	Apr. 1943
APPAREL AND OTHER FINISHED TEXTILE PRODUCTS	74.0	75.2	76.1	75.9	76.6	76.8	78.3
Men's clothing, not elsewhere classified	66	65	68	69	69	70	72
Shirts, collars and nightwear	88	87	86	88	88	88	89
Underwear and neckwear, men's	87	86	85	84	86	88	89
Work shirts	91	87	89	88	89	90	92
Women's clothing, not elsewhere classified	78	79	81	79	80	78	80
Corsets and allied garments	90	87	87	88	88	88	89
Millinery	69	70	70	67	68	69	71
Handkerchiefs	94	90	90	92	92	93	94
House furnishings, other than curtains etc.	64	61	62	59	61	73	74
Textile bags	66	63	63	65	68	72	73
LEATHER AND LEATHER PRODUCTS	40.0	38.4	40.2	40.0	41.7	44.1	48.9
Leather	9	9	9	8	9	11	16
Boot and shoe cut stock and findings	30	29	30	30	33	34	35
Boots and shoes	45	45	47	46	49	51	56
Leather gloves and mittens	61	61	64	64	65	68	72
Trunks and suitcases	30	31	31	38	39	44	51
FOOD	28.4	25.8	21.3	28.4	23.7	29.7	27.0
Slaughtering and meat packing	15	14	15	15	16	20	21
Condensed and evaporated milk	3	5	7	6	7	10	13
Ice cream	17	11	12	14	17	18	21
Flour	2	3	3	3	3	4	7
Cereal preparations	29	28	31	32	30	32	34
Baking	15	19	20	22	22	24	29
Sugar refining, cane	7	8	8	8	10	16	18
Sugar, beet	1	2	a	2	a	7	3
Confectionery	67	63	61	61	60	63	63
Malt liquors	1	1	1	1	1	1	7
Canning and preserving	56	51	40	52	42	51	43
TOBACCO MANUFACTURES	66.9	66.9	66.5	68.0	66.8	66.8	67.7
Cigarettes	48	48	49	49	49	53	55
Cigars	80	80	79	81	80	80	80
Tobacco (chewing and smoking) and snuff	50	47	47	47	46	47	50

Table 6 - Number of Women per 100 Wage Earners in Manufacturing Industries and Groups in Specified Months October 1939 to April 1943 Cont'd

(a indicates "less than 1"; x indicates "not available")

Industry Group or Industry	Oct. 1939 1/	Oct. 1940	Apr. 1941	Oct. 1941	Apr. 1942	Oct. 1942	Apr. 1943
PAPER AND ALLIED PRODUCTS	24.0	23.6	23.8	24.7	24.0	25.9	30.8
Paper and pulp	8	8	9	9	9	11	14
Paper goods, other	35	35	36	38	39	41	46
Envelopes	56	53	55	55	56	57	58
Paper bags	51	49	48	42	41	42	48
Paper boxes	41	41	38	40	39	41	46
PRINTING, PUBLISHING AND ALLIED PRODUCTS	17.8	19.8	20.7	22.3	21.6	23.7	26.7
Newspapers and periodicals	8	x	x	x	x	x	9
Printing, book and job	23	25	26	28	27	31	35
Lithographing	22	23	24	26	24	31	35
Bookbinding	42	42	42	43	43	45	51
CHEMICALS AND ALLIED PRODUCTS	14.7	15.4	15.0	16.2	17.8	22.3	29.5
Paints, varnishes and colors	5	5	5	5	6	8	12
Drugs, medicines and insecticides	42	47	46	49	47	50	56
Perfumes and cosmetics	69	65	62	69	66	65	69
Soap	17	18	17	17	16	18	23
Rayon and allied products	26	25	24	23	24	28	32
Chemicals, not elsewhere classified	3	3	4	4	4	5	10
Compressed and liquefied gases	1	a	a	a	a	a	5
Ammunition, small-arms	32	x	x	34	36	41	48
Cottonseed oil	1	a	a	2	2	1	3
Fertilizers	a	1	1	1	2	2	6
PRODUCTS OF PETROLEUM AND COAL	.3	.5	.4	.5	.6	.8	4.8
Petroleum refining	a	1	a	1	1	1	4
Roofing materials	1	2	1	2	1	2	8
RUBBER PRODUCTS	24.6	25.4	27.8	27.8	28.1	36.2	36.7
Rubber tires and inner tubes	14	14	16	17	18	27	29
Rubber goods, other	28	30	31	31	30	39	40
MISCELLANEOUS INDUSTRIES	36.6	35.2	34.7	34.3	35.7	38.1	43.9
Professional and scientific instruments and fire control equipment	15	14	14	16	16	27	41
Photographic apparatus	26	21	22	22	22	27	35
Optical instruments and ophthalmic goods	33	29	30	31	32	36	42
Pianos, organs and parts	10	9	13	10	11	15	23
Games, toys and dolls	51	46	45	50	48	49	52

* Derived from Census data by estimation.

1/ Derived from data of the 1939 Census of Manufactures - "Persons Employed in Manufacturing Establishments, by Sex" - August 1941.

Table 7. - Number of Women per 100 Wage Earners in Manufacturing Industries and Groups - January to June 1943

Industry Group and Industry	1943 January	 February	 March	 April	 May	 June
ALL MANUFACTURING	27.9	28.7	29.2	29.9	30.5	30.9
DURABLE GOODS	17.6	18.7	19.4	20.3	21.2	22.0
NONDURABLE GOODS	42.4	43.0	43.4	43.9	44.2	44.2
Durable Goods						
IRON AND STEEL AND THEIR PRODUCTS	14.3	15.5	16.3	17.0	17.7	18.5
Blast furnaces, steel works, and rolling mills	3	4	4	5	5	6
Gray-iron and semi-steel castings	5	6	6	6	7	7
Malleable iron castings	7	7	8	8	9	9
Steel castings	2	3	4	6	7	7
Cast-iron pipe and fittings	1	1	1	2	2	2
Tin cans and other tinware	36	38	39	39	41	41
Wire drawn from purchased rods	16	17	18	19	21	23
Wirework	25	26	27	28	28	31
Cutlery and edge tools	30	30	30	31	32	32
Tools (except edge tools, machine tools, files, and saws)	17	18	19	20	20	20
Hardware	32	32	34	35	36	36
Plumbers' supplies	15	16	17	18	18	19
Stoves, oil burners, and heating equipment not elsewhere classified	18	19	21	25	25	25
Steam and hot-water heating apparatus and steam fittings	19	21	22	22	24	25
Stamped and enameled ware and galvanizing	29	31	33	34	36	36
Fabricated structural and ornamental metalwork	6	7	7	7	7	7
Bolts, nuts, washers and rivets	23	24	24	26	28	29
Forgings, iron and steel	8	9	10	11	11	12
Screw machine products and wood	8	9	10	11	11	12
screws	30	31	32	32	33	35
Steel barrels, kegs and drums	20	20	20	23	24	28
Firearms	20	21	23	24	25	27
ELECTRICAL MACHINERY	41.4	43.0	44.4	45.1	46.0	46.1
Electrical equipment	35	37	38	39	40	40
Communication equipment	57	58	58	59	60	59
MACHINERY, EXCEPT ELECTRICAL	15.2	16.5	17.0	17.7	18.3	19.2
Machinery and machine-shop products	17	18	19	19	20	21
Engines and turbines	10	11	11	12	12	14
Tractors	5	6	7	8	10	12
Agricultural machinery, excluding tractors	4	5	6	7	10	12
Machine tools	10	11	11	12	12	13
Machine tool accessories	17	18	19	20	20	20
Textile machinery	14	15	16	17	18	18
Pumps and pumping equipment	10	11	12	12	12	13
Typewriters	36	37	38	39	39	39

Table 7. - Number of Women per 100 Wage Earners in Manufacturing Industries and Groups - January to June 1943 (Continued)

Industry Group and Industry	1943					
	January	February	March	April	May	June
Cash registers, adding and calculating machines	30	31	31	32	34	34
Washing machines, wringers, and driers, domestic	23	27	29	31	33	36
Sewing machines, domestic and industrial	28	29	29	29	29	30
Refrigerators and refrigeration equipment	25	26	26	26	26	26
TRANSPORTATION EQUIPMENT, EXCEPT AUTOMOBILES	16.2	17.1	17.6	18.5	19.2	20.4
Locomotives	1	2	2	2	3	3
Car building, electric and steam railroad	4	5	6	6	8	9
Aircraft and parts, excluding aircraft engines	35	36	36	37	37	39
Aircraft engines	23	25	26	27	28	28
Shipbuilding	4	4	5	6	7	8
Motorcycles, bicycles, and parts	22	23	25	25	26	27
AUTOMOBILES	15.2	16.2	16.6	18.1	20.0	21.0
NONFERROUS METALS AND THEIR PRODUCTS	18.1	19.0	19.5	20.3	21.1	22.1
Smelting and refining, primary, of nonferrous metals	1	1	2	2	2	2
Alloying; and rolling and drawing of nonferrous metals except aluminum	15	16	16	17	18	18
Clocks and watches	51	52	51	51	52	53
Silverware and plated ware	30	31	32	33	33	32
Lighting equipment	26	27	28	29	30	32
Aluminum manufactures	9	10	11	12	13	15
LUMBER AND TIMBER BASIC PRODUCTS	6.5	7.0	8.4	10.4	10.9	11.0
Sawmills and logging camps	5	5	7	9	9	9
Planing and plywood mills	11	12	13	15	16	17
FURNITURE AND FINISHED LUMBER PRODUCTS	19.4	20.7	21.6	23.0	24.6	25.1
Mattresses and bedsprings	31	33	34	33	34	35
Furniture	18	19	20	22	24	25
Wooden boxes, other than cigar	20	22	21	23	24	26
Caskets and other morticians' goods	18	19	21	22	23	23
Wood preserving	3	3	3	3	3	3

Table 7. - Number of Women per 100 Wage Earners in Manufacturing Industries and Groups - January to June 1943 (Continued)

Industry Group and Industry	1943					
	January	February	March	April	May	June
STONE, CLAY AND GLASS PRODUCTS	21.4	22.3	23.3	23.6	24.5	24.8
Glass and glassware	28	28	29	30	31	31
Cement	2	2	2	2	3	3
Brick, tile, and terra cotta	6	6	6	7	8	9
Pottery and related products	41	42	42	43	44	43
Gypsum	5	7	8	11	10	11
Wallboard, plaster (except gypsum), and mineral wool	9	10	14	16	19	21
Lime	1	1	1	1	1	2
Abrasive wheels	34	34	35	37	39	38
Nondurable Goods						
TEXTILE-MILL PRODUCTS AND OTHER FIBER MANUFACTURES	48.5	49.0	49.3	50.0	50.3	50.3
Cotton manufactures, except small wares	43	44	44	45	45	45
Cotton small wares	60	60	61	62	63	63
Silk and rayon goods	56	56	57	58	58	58
Woolen and worsted manufactures, except dyeing and finishing	46	47	47	47	47	47
Hosiery	66	67	67	67	68	68
Knitted cloth	49	50	50	51	51	51
Knitted outerwear and knitted gloves	79	79	80	80	80	79
Knitted underwear	77	77	78	78	77	78
Dyeing and finishing textiles, including woolen and worsted	26	27	27	28	28	29
Carpets and rugs, wool	35	36	36	37	38	38
Cordage and twine	42	42	42	43	44	44
APPAREL AND OTHER FINISHED TEXTILE PRODUCTS	77.6	77.8	77.9	78.3	78.6	78.8
Men's clothing, not elsewhere classified	71	72	72	72	72	73
Shirts, collars, and nightwear	88	88	89	89	90	89
Underwear and neckwear, men's	88	88	88	89	89	89
Work shirts	89	91	91	92	92	91
Women's clothing, not elsewhere classified	79	79	80	80	81	80
Corsets and allied garments	89	89	89	89	89	89
Millinery	70	71	71	71	69	68
Handkerchiefs	92	93	94	94	94	94
House furnishings, other than curtains, etc.	74	74	75	74	75	75
Textile bags	73	73	73	73	72	70

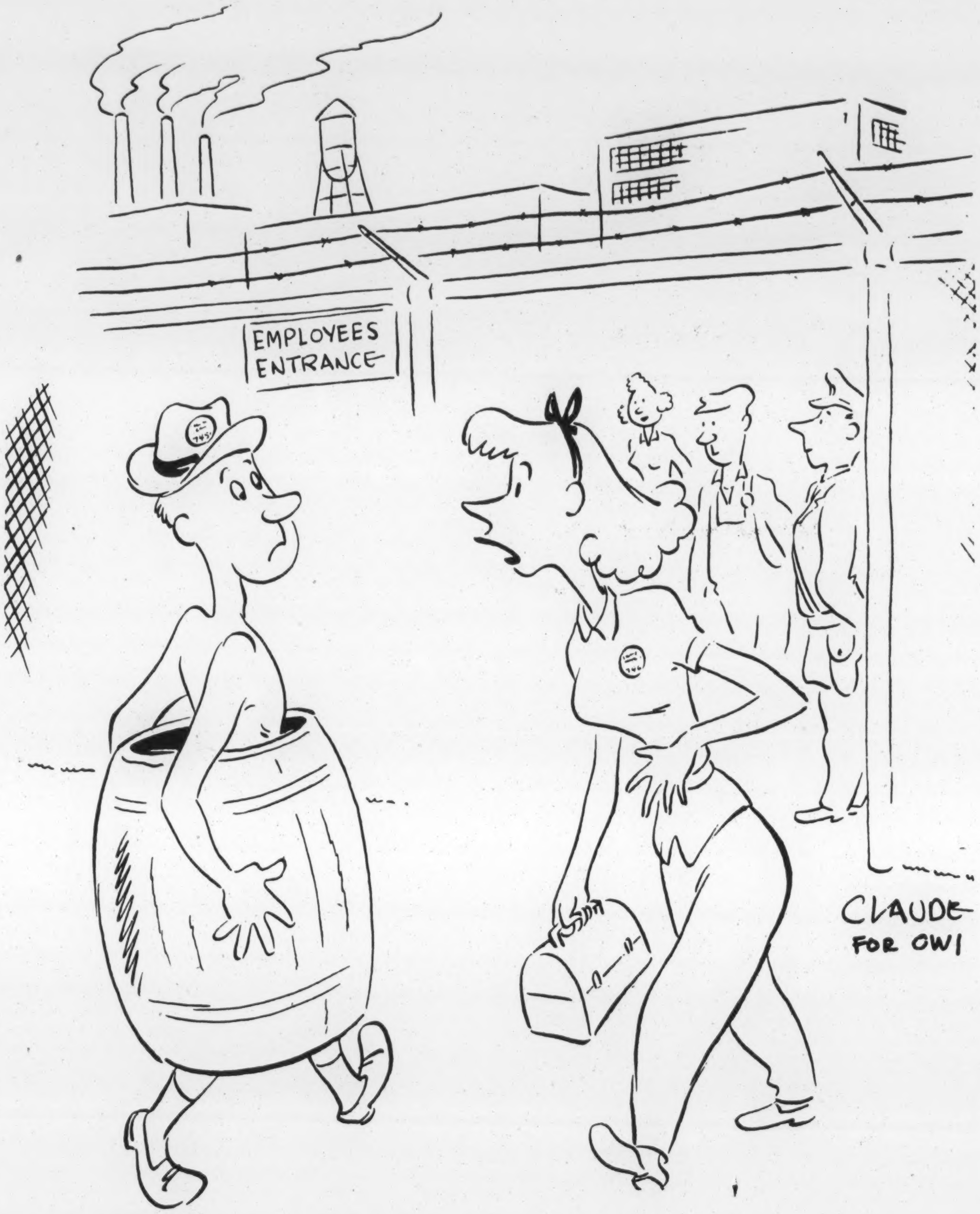
Table 7. - Number of Women per 100 Wage Earners in Manufacturing Industries and Groups - January to June 1943 (Continued)

Industry Group and Industry	1943					
	January	February	March	April	May	June
LEATHER AND LEATHER PRODUCTS	47.1	47.7	48.3	48.9	49.2	49.4
Leather	15	16	16	16	17	17
Boot and shoe cut stock and findings	33	34	35	35	36	36
Boots and shoes	54	55	55	56	56	57
Leather gloves and mittens	70	71	71	72	71	72
Trunks and suitcases	51	52	53	51	51	52
FOOD	25.7	25.8	26.3	27.0	27.3	27.5
Slaughtering and meat packing	21	21	21	21	22	22
Condensed and evaporated milk	12	12	13	13	14	14
Ice cream	17	17	18	21	23	24
Flour	8	8	7	7	8	7
Cereal preparations	35	35	35	34	35	36
Baking	26	26	28	29	29	29
Sugar refining, cane	18	17	18	18	19	19
Sugar, beet	5	3	1	3	4	6
Confectionery	63	62	63	63	62	62
Malt liquors	4	4	6	7	8	9
Canning and preserving	43	42	40	43	43	42
TOBACCO MANUFACTURES	66.8	67.2	67.4	67.7	68.6	67.8
Cigarettes	54	54	54	55	55	54
Cigars	80	80	80	80	81	81
Tobacco (chewing and smoking) and snuff	47	49	50	50	52	52
PAPER AND ALLIED PRODUCTS	29.2	30.3	30.7	30.8	31.3	31.6
Paper and pulp	13	14	14	14	15	16
Paper goods, other	45	46	46	46	46	47
Envelopes	57	57	58	58	58	58
Paper bags	45	46	45	48	47	47
Paper boxes	45	46	46	46	47	47
PRINTING, PUBLISHING, AND ALLIED PRODUCTS	25.9	26.6	26.8	26.7	27.0	27.6
Newspapers and periodicals	9	10	9	9	9	10
Printing, book and job	34	35	35	35	35	36
Lithographing	33	32	34	35	36	38
Bookbinding	49	51	51	51	51	51
CHEMICALS AND ALLIED PRODUCTS	27.6	27.7	28.2	29.5	30.2	31.2
Paints, varnishes, and colors	10	11	11	12	12	13
Drugs, medicines, and insecticides	54	55	55	56	56	56
Perfumes and cosmetics	66	66	67	69	68	67
Soap	23	23	23	23	22	23
Rayon and allied products	29	30	31	32	34	34
Chemicals, not elsewhere classified	9	9	9	10	10	10
Compressed and liquefied gases	2	4	5	5	5	5

★ THE OFFICE OF WAR INFORMATION ★

FORTNIGHTLY BUDGET FOR WARTIME EDITORS OF WOMEN'S PAGES

AUGUST 7, 1943



"ALL RIGHT, DEAR - SOMEHOW I'LL FIND TIME TO DO THE LAUNDRY"

CLAUDE cartoon (see story on page 2) is a contribution to the WOMANPOWER program. A cut can be made directly from this multilith.

Address Inquiries to HAZEL HOWARD, WOMEN'S UNIT, MEDIA DIVISION, NEWS BUREAU, OWI

HARD-HIT LAUNDRIES

NEED WOMEN WORKERS

Shortage of women workers is given as the chief cause of the shut-down of about 600 commercial laundries in the past year, more than 100 of which have closed in the past three months.

About 75 percent of all commercial laundry workers are women, according to the American Institute of Laundering. Of the remaining 25 percent which are men, almost half are subject to draft into the armed services, making it necessary to fill their places, too, with women, unless over-age men are available.

Laundry work, of course, doesn't have the glamour attached to it that building bombers or making bullets have. Yet it is a necessary wartime industry and one which any patriotic woman with time on her hands might well consider.

Hundreds of thousands of women who formerly did their own laundry at home have gone into war industry and must now send the family wash to a commercial laundry. Thousands of former private laundresses have also joined the war production lines, leaving their customers to shift for themselves. Many of these customers are not physically able to do their own laundry and must add their work to the burden of the commercial laundry.

Laundries, too, have been losing their experienced workers, especially in war production centers where the excitement of war production and the higher wages prove more enticing to them. And home laundry equipment production is at a standstill, further complicating the doing of laundry at home.

Yet the millions of wartime workers have more and dirtier clothes to be laundered and many military encampments have no laundry facilities of their own so must use those of the neighboring town.

At least thirty three laundry jobs of many different kinds are open to women, many of them considered light work and suitable even for women who may have physical handicaps such as deafness, loss of an eye, one or two fingers off, or hand or leg deformities. Age is no handicap, either, for about 75 percent of laundry jobs can be performed by older women.

One job, formerly done only by men but now being performed by women in several localities, is that of routeman or driver salesman who drives the delivery truck picking up and returning laundry bundles, collecting bills and listening to and reporting complaints.

Many of the jobs can be satisfactorily performed by part time workers, so that women with only a few hours a week at their disposal can be of great help, too.

***

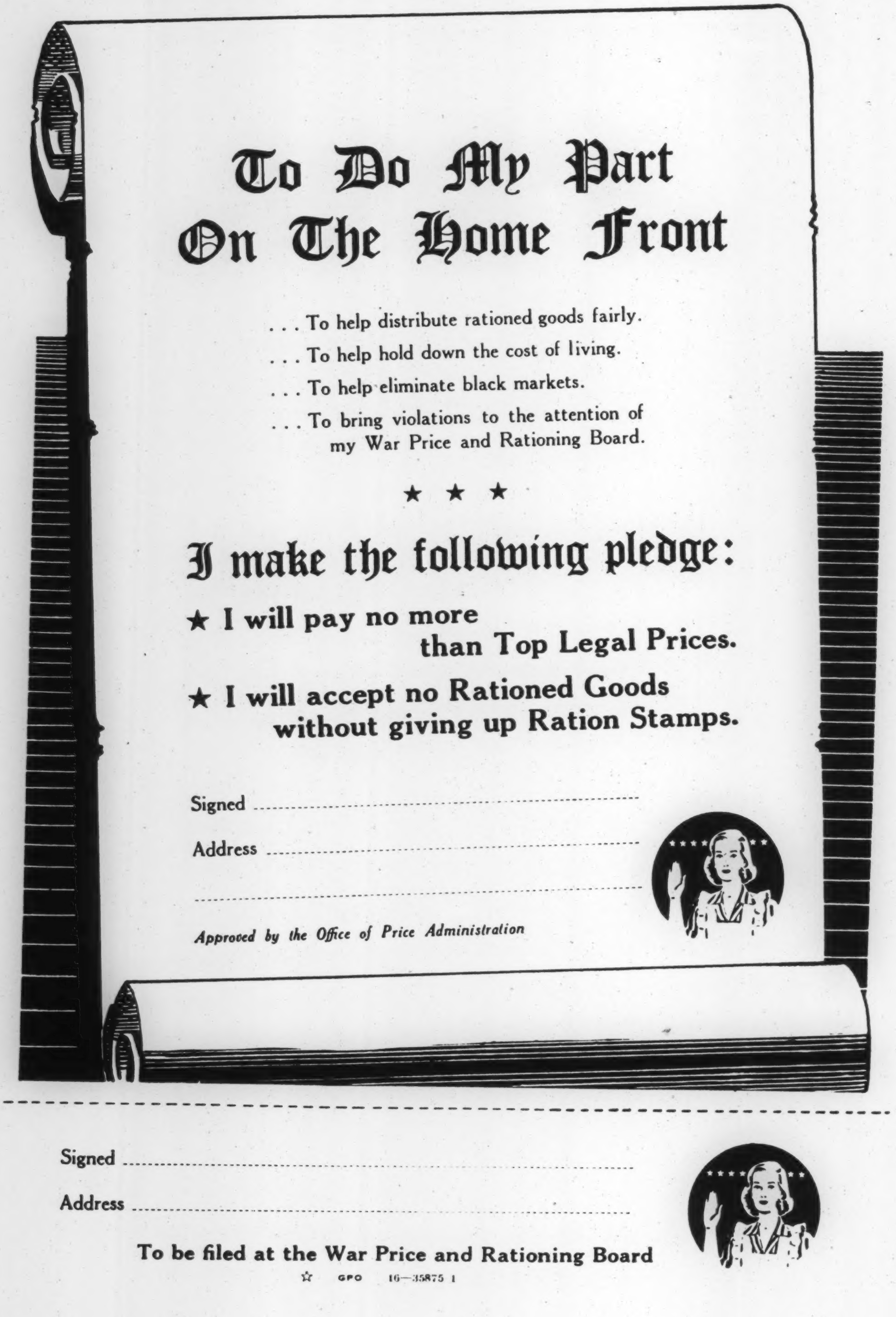
JUVENILE DELINQUENCY

All of the 16,500 federated clubs making up the membership of the General Federation of Women's Clubs will participate in a national campaign against juvenile delinquency and crime. The campaign will be conducted in all of the 48 states, in Alaska and the District of Columbia.

***

NEW BURN TREATMENT

The Office of Civilian Defense has withdrawn its former recommendation that tannic aid ointments or jellies be used in first aid treatments of burns. It now recommends sterile boric acid ointment or petrolatum.



To Do My Part On The Home Front

. . . To help distribute rationed goods fairly.
. . . To help hold down the cost of living.
. . . To help eliminate black markets.
. . . To bring violations to the attention of my War Price and Rationing Board.

★ ★ ★

I make the following pledge:

- ★ I will pay no more than Top Legal Prices.
- ★ I will accept no Rationed Goods without giving up Ration Stamps.

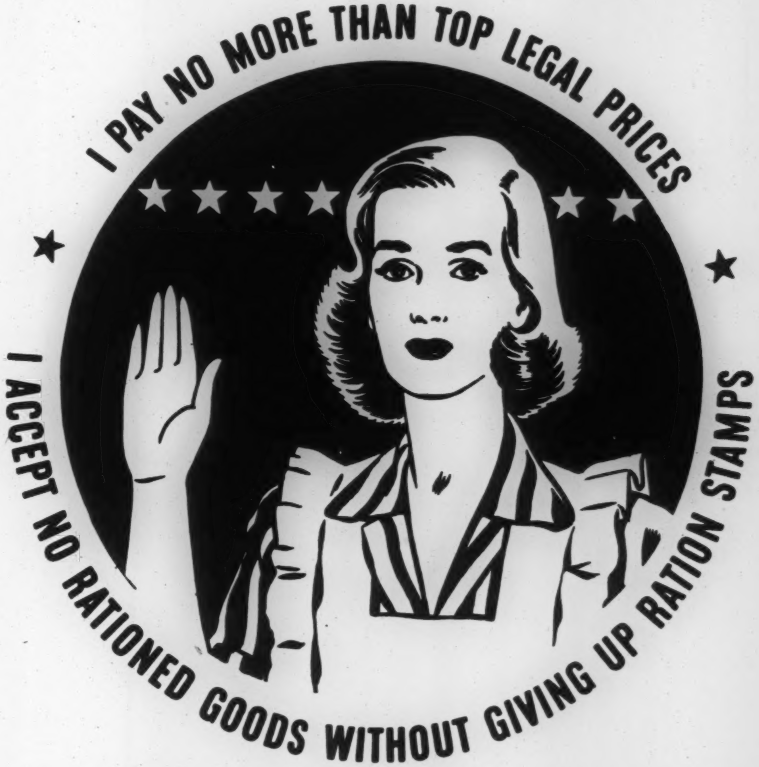
Signed ....
Address ....
....

Approved by the Office of Price Administration

Signed ....
Address ....

To be filed at the War Price and Rationing Board

☆ GPO 16—35875 1


I PAY NO MORE THAN TOP LEGAL PRICES
I ACCEPT NO RATIONED GOODS WITHOUT GIVING UP RATION STAMPS

These multilith illustrations, from which cuts can be made directly, are given in connection with the Home Front Pledge program, sponsored by OPA and described for you in our Fortnightly Letter dated July 17. This program is now under way in many areas. Your local War Price and Rationing Board can inform you when it starts in your area.

Above is a reproduction of the four-color sticker pledge signers are given for their windows. At the left is the pledge form.

This program has been tested in New Orleans, where 250,000 pledges were signed in four weeks. Newspapers printed the lists of OPA top legal prices and ran pictures of housewives signing the pledge. The following month a survey was taken of food prices and it was found that the city's average food costs had been reduced 5 percent.

WAR-DISABLED VETERANS

TRAINED FOR NEW JOBS

Have you a husband, a son, a daughter, a sister in the armed services? If you have, rest assured that should any of them lose a limb, an eye, be shell-shocked, contract diabetes or suffer any other of the casualties of war, neither he nor she need become a permanent disability or an object of charity.

Already vocational training and rehabilitation of those disabled in this war is under way, and veterans who have thought their injuries so serious that never again could they be of use in a trade or profession, are hard at work again.

Here are some typical cases which can bring comforting assurance to American women whose men or girls are serving their country in the armed forces:

> A gun pointer on the battleship Arizona at Pearl Harbor received a half pound shrapnel fragment in his leg as a Christmas present from the Japs. A year later he was busily at work as a lathe operator in a California plant producing electric cable connectors for aircraft and tanks.
>
> An airforce sergeant donated an arm at Pearl Harbor. Today he tests small parts with a micrometer in a General Motors plant in New York state.
>
> Three brothers joined the Navy. They stuck together even to the extent of all three being badly wounded in Pacific action. Today they are still working together making jeeps in an Ohio plant.
>
> A former bomber pilot who suffers from diabetes as a result of shock is now an inspector in the final assembly line of a Texas aviation factory.
>
> A Negro serviceman, who before the war was a truck driver, lost an arm at Pearl Harbor. He was given training and placed as a welder in war production work. Last spring he was awarded the silver medal of the War Production Board and cited for "distinguished service on America's home front."

All of these veterans and many others have received the special vocational training offered by the federal government to men and women disabled in the service of their country. Women receive exactly the same consideration for training and reemployment as do men. The only exception to this is that of the WAAC who may choose this fall whether she will continue in the new WAC organization as part of the Army or be given a discharge. Those present WAAC's who elect not to continue as WAC's will not be eligible for privileges of the veterans' rehabilitation program.

Training and placement is the concern of four different agencies. For training, the Veterans' Administration, the Office of Education and the Civil Service Commission are responsible. Placement is done by the U. S. Employment Service.

To date the majority of the men discharged from the armed services because of disabilities prefer to go to work on the war production front where they know they are still helping to win the war.

***

"WRENS" SERVE AS DECKHANDS

Members of the British WRENS (Women's Royal Naval Service) are now serving as deckhands in the crew of a British merchantman. They are the first women in this war to go to sea as ordinary members of a British ship crew.

***

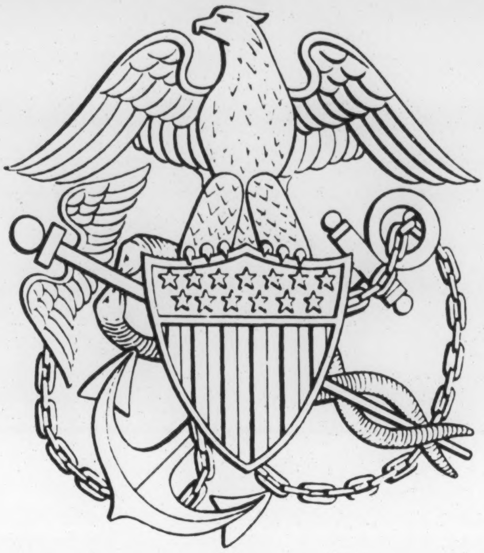
FLASH!

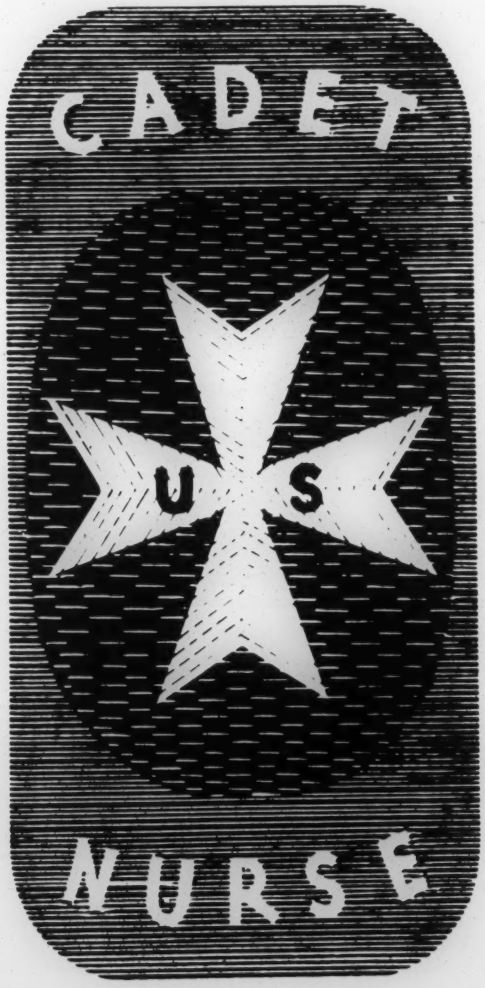
This is the first release of the insignia to be worn by members of the new U. S. Cadet Nurse Corps. Cuts can be made directly from these multilith illustrations.

INSIGNE OF THE

U. S. PUBLIC HEALTH SERVICE

to be worn on the beret, on each lapel of the street uniform and on the buttons. The actual size of this insigne will be similar to that used on military uniforms.





THE MALTESE CROSS INSIGNE

historically connected with profession of nursing, to be worn on the upper part of the left sleeve of the outdoor uniform. This is a woven insigne in silver on a deep red background.

The use of the Maltese Cross in nursing goes back to the First Crusade in 1099 A. D., 721 years before the birth of Florence Nightingale. At that time the Knights Hospitalers of St. John, which was the first nursing order, carried on a nursing service for wounded Christian soldiers. On the left breast of their black robes they wore a white linen eight-point cross, symbolic of the eight beatitudes which formed the opening of the Sermon on the Mount.

The Knights Hospitalers later became a military order, but in the 16th and 17th centuries the nursing order was reestablished on the Island of Malta. The symbol was retained but renamed the Maltese Cross.

STUDENT NURSES NOW IN TRAINING

ELIGIBLE FOR U. S. NURSES CORPS

Student nurses now in training may apply for membership in the U. S. Cadet Nurse Corps immediately. As Cadet Nurses they will have an opportunity to serve their country in the most important war work a woman can do .. saving lives.

By enlisting in the Corps, student nurses will receive all-expense scholarships, with the privilege of wearing distinctive street uniforms which indicate they are in the service of their country, as well as receiving a monthly spending allowance.

Student nurses who enlist in the Corps will continue their present course without interruption at the same school of nursing in which they are now enrolled, if that school is participating in the program authorized under the Bolton Act. Credit will be given for previous training in accordance with the policy of the school. Expenses covered by the law are retroactive as of July 1, 1943.

All Corps members are provided with tuition, maintenance and fees, plus a monthly allowance of $15, $20, or at least $30, depending on whether they are Pre-Cadets, Junior Cadets or Senior Cadets. Attractive summer and winter street uniforms, designed by the nation's leading fashion experts, are furnished without charge. Wearing of the uniform is optional. Insignia are that of the U. S. Public Health Service and the Maltese Cross, both rich in tradition.

Under the accelerated program, U. S. Cadet Nurse Corps members receive important nursing assignments during the Senior Cadet period. Such assignments may be in the home hospitals; in other hospitals, including Army and Navy; or in Public Health Nursing agencies. As graduate nurses they will serve in essential civilian hospitals, the Army or Navy Nurse Corps, or in other Federal government agencies and institutions.

Student nurses admitted to schools of nursing after December, 1940, may transfer immediately to the U. S. Cadet Nurse Corps, if they have been in an accelerated course and are attending a school receiving Federal funds. Students in training 90 days prior to the end of hostilities may complete their training at Government expense.

Directors of all schools of nursing have received leaflets and posters describing the program. About 1,300 accredited schools of nursing have been sent application forms and invited to submit plans for participation in the U. S. Public Health Service program, as authorized by the Bolton Act. The Bolton Act represents the concensus of the best opinions of the nursing profession, hospital groups and educational institutions. It grew out of the petitions of nursing institutions for the establishment of a uniformed organization for student nurses.

Girls not already enrolled in a nurse training course, who wish information on the U. S. Cadet Nurse Corps, can obtain it from local nursing schools or from the National Nursing Council for War Service, 1790 Broadway, New York, N. Y. The Council can also supply a list of 1,300 accredited nursing schools, and lists of schools in each State can be obtained from State Boards of Nurse Examiners.

***

BRITISH WOMEN WORKERS

Under the British Registration of Employment order, 3,500,000 women reported as married and with children under 14 years of age. Although these women are exempt from service, it was found that 510,000 of them were already in full-time employment.

OFFICE OF FISHERIES
OFFERS SKATE RECIPES

Skate, or "raja", as this fish is also called, is one of the seafoods with which most Americans aren't very well acquainted. Yet it is plentiful along the New England, Middle Atlantic and Pacific Coasts and a valuable addition to a nutritious diet, reports the Office of the Coordinator of Fisheries.

Experiments conducted in its kitchens have evolved some tasty recipes for the use of skate. Only the wings of this odd looking fish are used and the basic recipe for preparing these is as follows:

4 lbs. skate wings
3 cups boiling water
1 tblspn. salt

Place wings, salt and water in a pan with tight fitting cover. Steam 30 minutes. Drain and cool slightly; then remove skin and bones. Yield: about 1½ pounds of flesh.

To use the skate, Office of Coordinator of Fisheries suggests these recipes:

RAJA RICE

½ small onion diced
2 tblspns. green pepper
2 tblspns. butter or fortified margarine
2 tblspns. flour
½ cup tomato juice
1 cup flaked cooked skate
1 cup cooked white rice
¼ cup bread crumbs
½ tblspn. butter or fortified margarine
salt and pepper to taste

Brown the onion and green pepper in the two tblspns. of butter till the onion is golden brown. Add flour and seasonings. Gradually add tomato juice and cook till thick, stirring constantly. Then add skate and rice. Place in greased casserole and top with buttered bread crumbs. Bake in a 375 degree oven 15 to 20 minutes or until brown on top.

SKATE BACON ROLLS

1 cup flaked cooked skate
1 egg slightly beaten
½ cup tomato juice
1 cup soft bread crumbs
1 tblspn. grated onion
¼ tspn. salt
1/8 tspn. pepper
6 slices bacon

Combine the skate, egg, tomato juice, bread crumbs and seasoning, mixing well. Shape into six rolls of finger length. Twist a strip of bacon around each roll and fasten with a toothpick. Place on the broiler rack and broil in pre-heated broiler, turning frequently, until the bacon is crisp.

FROZEN SKATE PUDDING

2 cups flaked cooked skate
2 tblspns. unflavored gelatine
1 cup cold water
1 cup boiling water
1 cup mayonnaise
1 cup light cream* or evaporated milk, whipped
2 tblspns. pimiento strips
2 tblspns. chopped green pepper
½ tspn. salt

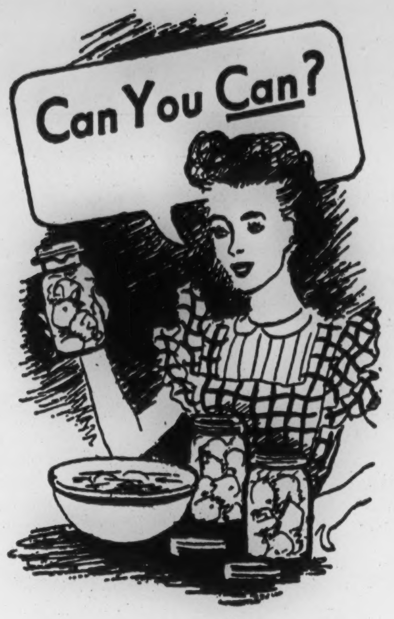
Soften gelatine in cold water five minutes and add boiling water. Stir till dissolved and chill till slightly thickened. Fold in mayonnaise, cream and skate. Grease a mold lightly with a few drops of salad oil and line mold with pimiento strips. Fold in remainder of pimiento, green pepper and seasoning and pour into mold. Chill until firm. Unmold and serve garnished with lettuce.

*If you have no luck trying to whip light cream, fold it in as is. The resulting pudding will be satisfactory though not quite as fluffy.

EDITOR NOTE:

A cut can be made directly from the multilith shown at the right.

Mats in the same size as shown are also available. For mats, please use order blank on Page 10.



Everybody can't. But if you can can, can plenty. Home-canned foods don't count in rationing. The more done at home the fewer points used in buying commercially canned food. Helps you by leaving more points for other rationed foods; helps the war by lessening demand on tin; helps war workers who can't can by leaving greater choice for them when they shop.

MANY CHINESE WOMEN STUDENTS ESCAPE FROM JAP-HELD AREAS

Passing through some of the most difficult terrain in the country, some 3,000 Chinese students, one-fourth of whom are women, have made their way from Jap-occupied territory into Free China since the beginning of this year. This brings the total number of students who have escaped from Jap-held territory to 30,000, according to a recent Chungking radio broadcast reported by United States Government monitors.

Most of these students intend to continue their education and will be assigned to different educational institutions and supported almost entirely by funds provided by the Ministry of Education.

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RURAL TEACHERS NEEDED

Considerable concern is felt by the War Manpower Commission over the growing shortage of teachers in rural schools. Over 100,000 teachers left their profession last year, according to the U. S. Office of Education.

EDITOR NOTE: This Leo masthead may be used as a column heading if you wish. A cut can be made directly from this multilith.

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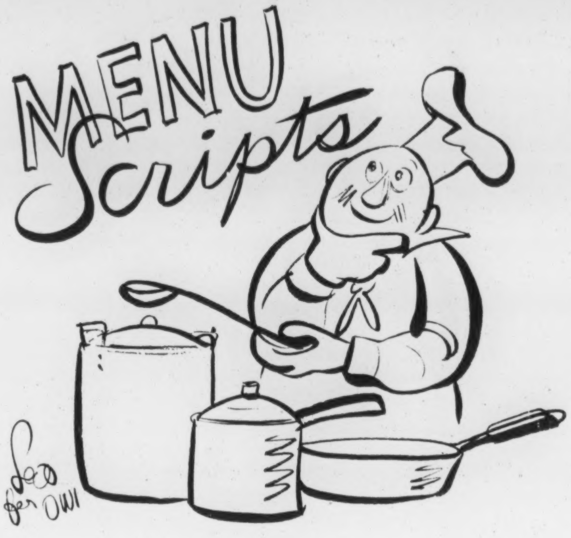

Fruit-ades are hot day aids. Citrus fruits make the best, for they're chock full of Vitamin C. Tart lemons, tantalizing limes, flavorful oranges or grapefruit, with the glass filled up with charged water, can be sweetened with a bit of jam or jelly for sugar-saving as well as piquant taste.

***

Hot, open-faced sandwiches are always a popular luncheon dish, and a good way to use meat leftovers. But use hot baking powder biscuit for the bread part occasionally, and then listen to the children ask for more.

***

When selecting the cabbage coming into market now, choose the ones with the greenest leaves for these contain more vitamins and minerals.

***

Though the June collections of waste kitchen fats exceeded all previous monthly figures, the total of 8,440,274 pounds is still not sufficient to meet the demands of war use, according to War Production Board.

But fats are just as important on the Home Front as on the Battle Front. Just as their by-product, glycerine, provides the energy which fires shells at the enemy, fats also provide the body with energy to keep it working or playing. And just as no fat should be allowed to go to waste in the garbage pail or down the drain, so no fat should be wasted in preparing it for food. One gram of fat provides nine calories, while the same weight in starch or sugar provides only 4.5 calories.

Measuring accurately is one way to avoid fat waste and a good way to measure solid fats is this: to measure ¼ cup of butter or other solid fat, fill the measuring cup 3/4 full of cold water. Add the fat, pushing it under the water until the water comes to the level of the cup top. Pour out the water and there is left an accurate ¼ cup of fat.

***

Sour milk, poured down the sink drain, doesn't do the drain, nor the family, any good. But sour milk has all the food value of fresh milk -- its calcium, protein and vitamins. The family will get those food values if it's used in pancakes, biscuits, butter cakes, gingerbread or cottage cheese. To make the cottage cheese, let the milk thicken at room temperature; then place it in a clean cheesecloth bag and drain over night. Add salt (and pepper if desired) to the curds left in the cheesecloth and chill before serving. Chopped chives give it a pleasant tang, and a tomato stuffed with it makes a delicious luncheon dish.

***

Everybody's trying not to waste an ounce of good food these days. That means the refrigerator or ice box has to care for more "odds and ends" than it used to. If you're having trouble finding space in yours, make a survey of its contents and see if you haven't stored some things in there that don't really need to be kept cold. Pickles and jelly, for instance, don't have to. The hydrogenated types of vegetable fats and shortenings also keep just as well at room temperature. If such things are taking up valuable space, whisk 'em out and make room for things which might spoil if not kept cold.

***

GET THOSE "EMPTIES" BACK!

It takes machinery, fuel and manpower to make beverage bottles, and all three of those things could be put to better use in producing essential war materials. That's why households are being urged to seek out all the "empties" lurking about the home and return them to local stores. It's estimated that millions of empty beverage bottles are just sitting around the country's homes. Since the average life of a returnable bottle is about 30 round trips, each bottle not in use represents 30 new ones which will have to be made if the empty isn't returned.

***

TURKEY FOR FIGHTERS

Though thousands of miles may separate them from their homeland, the men of the American armed forces will enjoy the traditional Thanksgiving and Christmas dinner main dish -- turkey. Already the turkey industry has been asked to provide around 10 million pounds of turkey meat for this purpose, and since it's wanted early in the season for shipment, hotels and restaurants have been asked not to serve turkey and civilians are asked not to buy turkey for the first few weeks of the early season. But well before Thanksgiving Day, there'll be plenty of birds for civilians .. probably a record supply, according to the War Food Administration.

***

NAZIS FORCE LABOR SERVICE ON YOUNG GIRLS OF NORWAY

Norwegian parents and German police are in conflict over the conscription of girls for forced labor, according to the Stockholm newspaper, Dagens Nyheter. According to the dispatch, several Norwegian girls under the former minimum age limit of 20 had been called for labor service and had refused to obey. Their parents were summoned before the German police and subjected to long examinations. Quisling authorities deny that the labor service is "political." Yet German journalists who are "visiting" Norway have expressed their admiration for the strong position the Norwegian National Socialist Party holds among youth.

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Women's Unit, News Bureau
Office of War Information
Room 3540, Social Security Bldg.
Independence Ave. & 4th, S. W.
Washington 25, D. C.

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August 1943

No Danger! WOMEN AT WORK

Women in Industry

It can't happen to me, you say? You won't have women in your plant? Well, mister, what if it becomes necessary to do so in order to stay in business? Because, you know, the war isn't over and the manpower situation isn't getting any better. However, employing women in your plant is nothing to worry about—if you go at it in the right spirit and with proper care. Others have done it to their satisfaction—you can do so, too.

The armed services and defense industries are rapidly depleting the ranks of men in civilian industries, so we face the fact that vacancies must now be filled by women or older men.

When the armed services started taking our nation's men the defense industries were the first to realize the necessity for employing women, and they did not hesitate to take that step. Now there are approximately 2,600,000 women punching clocks in American shipyards, munition plants, airplane factories, arsenals, and other wartime industries. Before the war is over there may be 2,000,000 more women on the assembly lines of American industry. At the end of this year as many as 1/3 of the workers in home front jobs may be women.

Civilian industries with foresight were not slow in following the lead taken by the defense industries; many started quite early training women to take the jobs of men who might be drafted or leave for higher paying defense jobs.

Bottling Industries Find Women Satisfactory

The soft drink industry as well as the milk and brewing industries, which have many similar problems, are placing women in many of the jobs formerly held only by men.

For example, the *milk industry* is using women in the place of milk-route salesmen, and they are proving to be eminently successful and efficient, and have worked into their jobs with an absolute minimum of fuss and bother. The Supplee-Wills-Jones Milk Company, Philadelphia, Pa., has been very careful in selecting its women employees, following this method: (1) looking for good personable sales types, women who prefer outdoor work and who have sales experience or strongly evident sales tendencies, and are from 22 to 37 years old; (2) putting the women selected through an intensive three-week training period during which they are exhaustively schooled in the business end of route sales work—bookkeeping, order recording, and collection techniques—and are given a strict safe-driving course. They find that the majority of the women so selected and trained are dependable, can do the work easily, and are working more and more into the selling end of the business. It is true, of course, that milk deliveries are easier for a woman to handle than soft drink (24-bottle case) deliveries. But it has been proven that a strong, healthy woman, with or without a helper, can handle a soft drink route, also. (N.B.G., April, 1943, p. 44.)

Although no one denies that *brewing* is essentially a man's industry, women are gradually finding their way into that type of plant. The brewing industry has during the present emergency been in a favorable position: it is a skilled industry; the average age of the brewery worker is high; brewing attracts a steady type of man, the family type; so draft regulations have, up to the present, affected a smaller percentage of brewery workers. Nonetheless, new draft orders will create vacancies which it will be necessary to fill. The breweries are preparing for such emergencies. They are seeking women through advertisements and the U. S. Employment Bureau, women interested in the jobs they have to offer—lighter ones, such as levelling, inspection, checking, shipping, and a great many others. They also find that women are definitely giving good service in yard employments, cleaning, loading (where the equipment and platform arrangement permits) and maintenance work.

Anheuser-Busch, Inc., St. Louis, Mo., has a number of women employed setting up cartons, checking bottles in cartons, sealing them, etc., but they are not yet using them on the filling line.

Reorganization of jobs can aid

thing half-way between straight juice and the "diluted cider" varieties. Vernon Charley, at Long Ashton, has made numerous experiments with apple juice, not all of which have had the attention by the industry that they merit. For example, he has produced an "apple treacle" which can readily be diluted with carbonated water to form a very palatable beverage. It is true that it is somewhat lacking in flavor, but here again, Mr. Charley has pointed the way. In evaporating apple juice to form concentrate, the esters can be trapped and condensed in the form of a thick oily fluid. In one experiment, this authority added the esters to an acidified sugar sirup and evolved a product closely resembling fresh apple juice, as produced by the hot process. No doubt, the war has been instrumental in preventing the beverage industry from seizing upon the lesson of this experiment and putting it to practical use; and I imagine that, in the post-war era, some of our more progressive manufacturers will evolve an excellent apple beverage, superior to anything which has been put out previously at a "people's price," from apple treacle plus an apple ester concentrate. On the synthetic side, I have no doubt that our essence houses have duly noted and profited by the researches of Power and other American workers who have done much to lay bare the secrets of the apple flavor, or rather the many flavors of the different kinds of apple. Certainly there are much improved "apple essences" on the market than there were in the days of my youth, and although we may not get a perfect "Appleade" during the war, I believe that we can turn out a very good substitute from such juice as is available, plus some of these judiciously compounded synthetic flavorings.

(5) Provision is now made for the production of "Hop Bitters," "Herbal Beverages" and "Botanical Beverages." These lines are of peculiarly British origin. At one time their production formed a sizable percentage of our total manufacture, but, apart from one or two bottling firms who have specialized in them, such as Wheatley & Bates, of Sheffield, this branch of the bottling business has been on the decline for many years now. Nevertheless, many people who do not ordinarily indulge in soft drinks, buy these light fermented but non-excisable productions readily, and it is only right that provision should be made for their continued manufacture during wartime! To give you a better idea of the type of beverage, let me append a typical Hop Bitters recipe:—

600 U. S. Gallons HOP BITTERS
16 lb. Worcester Pale Ale Hops
4 lb. Best Kentish Hops
4 lb. Bruised Ginger of good quality
2 lb. Block Juice
40 lb. Malt Extract
3 lb. Caramel
1 cwt. Sucrose
1 cwt. "Unfermentable sugar."
Brewers Yeast Q.S., about 1 U.S. pint per U.S. barrel.

The brewing is very similar to that in orthodox beer brewing. The Worcester hops and ginger are boiled for three quarters to one hour in a suitable copper, and the more delicate Kentish hops then added and boiled only for about a third of that time. Sugar, malt, block juice and caramel may be added to the copper—and I believe that to be the best method—or the hot wort may be run on to them in the fermenting vessel. There are usually two or more boilings to complete the "length," which is cooled down to about 68° F., and pitched with the brewers' barm, or alternately with a liquefied solution of compressed pure culture yeast. Fermentation at controlled temperature continues from 36 to 48 hours, with or without aeration, the yeast head being skimmed off from time to time. The product may then be racked off to another tank, and bottled in the fashion of a "running ale," or it may be racked to casks and dry hopped and fined in cask. The latter process is, naturally, more expensive, but gives a markedly superior product. The beverage is then bottled, after a period in the latter case, of cask conditioning, and allowed to self-mature.

The herbal and botanical beverages referred to cover an enormous variety of lightly fermented drinks. processed in a similar manner to the above. Just why they should be divided into the two heads I do not know, for it would take a more forensic brain than mine to decide which sample was a "botanical" and which a "herbal" beverage. A favorite recipe for "Herb Beer" calls for Chamomile, Gentian, Ginger and Hops, while one old-established "Botanic Beer" is manufactured from Horehound, Dandelion Root, Ginger, Block Juice and Hops.

The concentration scheme is now working fairly smoothly. There are still a few grouses, the most serious, perhaps, being in regard to the "target" figure for production. It has been pointed out in several quarters that while the brewers are being given encouragement to maintain production of beer, the producers of soft drinks have had their goals cut to 85 million gallons. Actually, but for the intervention of the National Union, this figure would have been 50 million gallons only.

The more serious aspect of the situation to the writer's mind, however, is not quantity but quality. As you must appreciate from the data I gave recently on the standards of composition, our wartime beverages are of distinctly low quality and of negligible sugar content. Beer, on the other hand, although admittedly appreciably lowered in gravity, is still of reasonably high quality, as the cuts in raw materials for brewing, although considerable in an actual sense, are trifling compared with the wholesale slashing of raw materials for non-alcoholic drinks! As one writer has expressed it, "Beer is at least three-quarters as good as it was in 1939; carbonated beverages are not one-fifth as good, if judged on sugar content, and when we take everything into consideration are not more than one quarter to one third the quality they were before the war!" The fear is expressed that this deficiency in quality may have a permanently adverse effect on the prosperity of the industry, and there are loud calls for treatment more analogous to that accorded to the brewers. Unfortunately, however, I am afraid that ninety-nine plus of this eloquence is being wasted on the desert air!

in streamlining the infiltration of women into brewery work if ever it should be required on a substantial scale. Men do not object to working side by side with women in breweries, but men are afraid that women will work at lower rates, so "equal pay for equal work" will have to be the rule. Brewery work needs brawn, and not every woman fills the bill in this respect. On the other hand, men have no monopoly *on brains*, and women are reported to be good learners. The brewers find that the only promising chance to build up a woman labor force is to start from scratch. That means finding the type of woman that is suitable for the work, training her and making the job attractive. So much for the brewing industry.

The *soft drink industry* is moving right along with the other civilian industries in augmenting its dwindling manpower with woman-power. Large and small plants are experimenting with women in various jobs. For instance, the Pepsi-Cola Bottling Company, Baltimore, Md., one of the largest plants in that section, which up to several years ago never employed a woman in any capacity, now has 50% of its inside work done by women. (N.B.G., February, 1943, p. 41.) At the other end of the line, the Tip Bottling Company, Hickory, N. C., has a plant force of four women (two married and two single): one is a mechanic and bottler, one is an inspector, one is a soaker feeder, and one is a bookkeeper; and the owner of this plant is so satisfied with the set-up that he plans to try women out on delivery routes. Other plants that have turned to women for help and have found them efficient and satisfactory are: (reading from North to South): Pepsi-Cola Bottling Company of Rochester, Minn.; Oklahoma Coca-Cola Bottling Company, Oklahoma City, Okla.; Coca-Cola Bottling Company, New Orleans, La. (a pioneer in the employment of women plant workers); and the Seven-Up Bottling Company of Tampa, Fla.—to name a few.

The latter named company deserves special mention — to our knowledge, it is the only all-woman staffed bottling business in the country to date, utilizing women workers both inside the plant on the production line, and outside, as route salesmen. The route supervisor is also a woman!

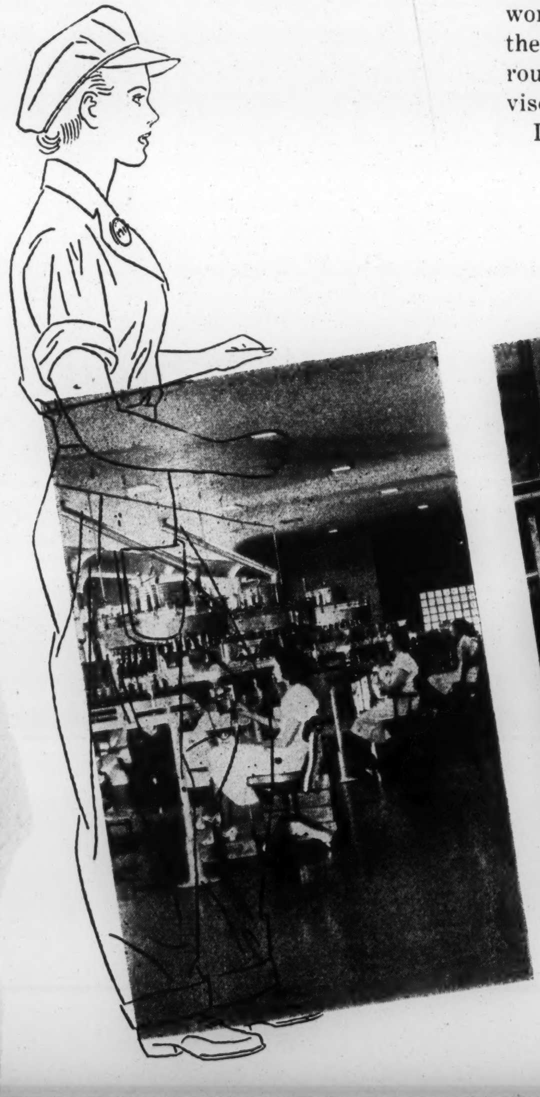
Let C. W. Bray, owner of the Seven-Up Bottling Co., tell the story in his own words:

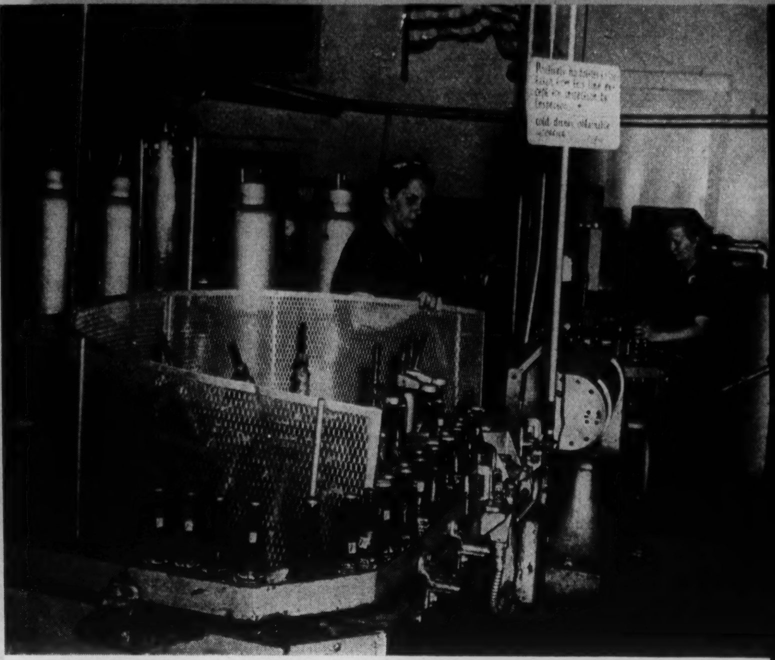
"We have been using women in the plant for about a year, and I can honestly state that so far, their work has been more satisfactory than the men who preceded them. They are able to do all the work that the men did and surprisingly, even heavy work such as stacking cases in the stock room and handling empty cases as well as loading and unloading trucks.

"As far as the sales force is concerned, it has surprised me even more than the inside production force.

"It was not my original intention to put women on the trucks, but when all of my distributors walked out because I asked them to load and unload their trucks, I was forced to do something in a hurry. I told my manager, Mr. Carrington, to hire a saleslady for each truck and to give each saleslady a man helper to do the driving and heavy work. This he did, and much to our surprise it was the women, themselves, who asked for women helpers, because, as they put it, 'the men were too slow and lazy.' Each woman seemed to have a friend who she thought could do the job better than the male helper we had given her.

"I didn't think that it could possibly work, but was willing to try





Nineteen women do all the production and warehouse work in the plant of the Seven-Up Bottling Co., Tampa, Fla. Picture is of mixing and casing operations.

E BOULEVARD
FOUNTAIN SERVICE
Coca-Cola
our fresh up
7 Up

Mrs. Josephine Rodriguez manhandles two cases of Seven-Up with apparent ease. She drives that truck, too.

anything once. You can well imagine my utter amazement when I saw women weighing anywhere from one hundred to one hundred and forty pounds walking into a customer's place of business with a case of Seven-Up in each hand. That is exactly what happened and is still happening, and all to my entire satisfaction.

"These women take their jobs very seriously. They are more conscientious about serving customers and keeping their money straight than were the men, who incidentally were working as distributors and were making considerably more than the women we now have on salaries. The women seem to have better spirits and show fatigue less than the men did. It is really a pleasure to talk to them when they check in after unloading from one hundred to two hundred cases of merchandise. They are enthusiastic and full of pep.

"At the present time, we have ten trucks working in Tampa with two women on each truck. Some are married and some are not. They are trained and checked by our lady supervisor who, incidentally, just received this promotion because of her unusual ability as a saleslady on the truck. She is forty-two years old, *a grandmother*, weighs a hundred and twenty-four pounds and is a dynamic worker. Her name is Mrs. Oma Mercer, and I think she is capable of doing anything any man supervisor could do, only a little better.

"The age range of our girls is from eighteen to forty-five. They are uniformed. We have no special facilities other than the usual rest rooms at the present time, but I am planning on enlarging our facilities, both for rest and recreation, in the near future. The absentee record as far as present labor conditions are concerned is considerably less with women.

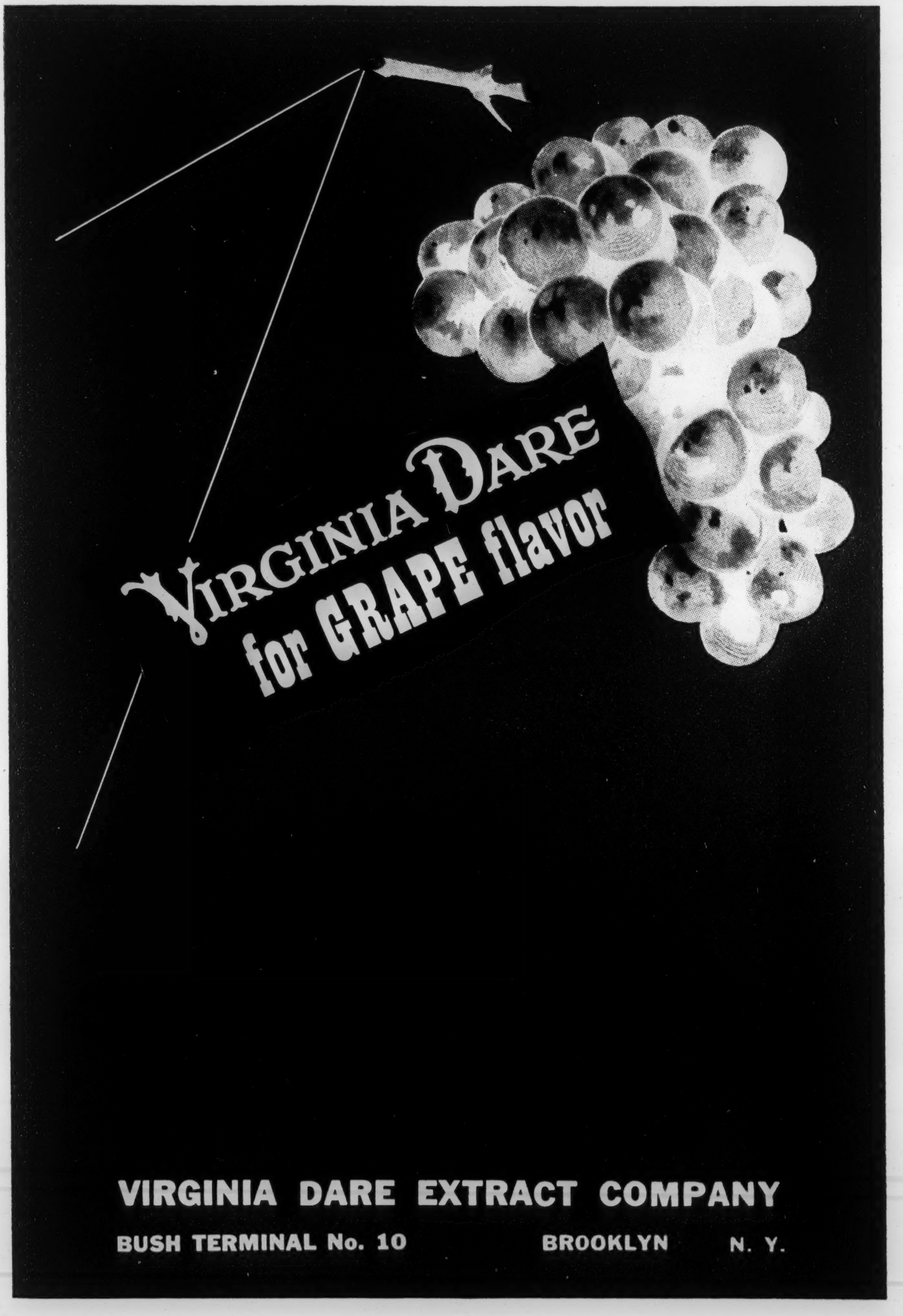
"Please don't think me just painting a rosy picture. We have had some difficulty with women just as we always had with men. It is possible to pick the wrong woman for a specific job and find that she is a weak sister who can't hold it down, which naturally necessitates replacing or transferring her to some other job. However, I have found that women will try very hard not to have this happen."

In April of 1943 the Coca-Cola Bottling Company of Baltimore, Md., started its experiment in the use of route saleswomen. Applicants were secured through classified newspaper advertising and the women selected carefully trained. The company mapped out a delivery system which limited the definitely scheduled quantities of cases the women were expected to deliver to equal about one-half of the cases delivered by men each day, and gave the women territories in the better residential sections where the outlets were on the ground floor and easier to serve. This company now has four route saleswomen whose work has been satisfactory from the start and who, as they gained experience, have improved in merchandising duties expected of salesmen. This type of work was ordinarily considered too heavy for women to do without the aid of a helper. However, it was found that several dealers on each woman's route were willing to remove their cases from the trucks, and in this way the women are able to deliver a full truck load each day without any difficulty.

This plant is also using women on inside jobs of various kinds, including packing cartons and stacking empty cases; they are now experimenting to a limited extent with women in stacking full cases, having reduced the required height from 10 to 8 high. On outside work they have a woman who erects transparencies on dealers' store windows (she does this as well as a man); and they are contemplating hiring a woman for some solicitation work in connection with flower arranging activities among garden clubs and advertising activities among other groups or organizations.

Employment of Women Presents Some Problems

The enforced use of women has raised definite new problems, such as plant re-engineering, re-planning plant layout, and revising standards of work measurement and time. There is also great necessity for industry to understand the housing, health, transportation, and individual problems involved in this great surge of woman em-



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ployment, and make full provision to meet them.

It is generally agreed than women have certain physical limitations which must be considered in planning their plant work. *Heavy weight lifting* is one of the more difficult problems, in which connection the Women's Bureau of the U. S. Department of Labor states that women in general have about one-half the average man's physical lifting strength and about two-thirds of the average man's resistance or staying power. (Six states limit by law the amount of weight a woman may lift: in California and Ohio this is 25 pounds; in Massachusetts, 75 pounds; in Pennsylvania, 15 pounds; in Utah, 30 pounds; and in Washington State, an "excessive burden.") In many plants this problem is already met by the use of devices such as roller conveyors and pedestal lifts, to do the heavier lifting and conveying, as well as lower or higher work benches, and other special adjustments. A number of plants have found that about 25 pounds for continual lifting, that is, 10 lifts or more an hour, should not result in fatigue or injury from overlifting.

In general, women tire faster than men, and, where possible, they should be seated at their work. Also they are more sensitive to noise, dirt, unpleasant odors, which—far from being a problem—tends to promote orderliness and sanitation in the bottling plant, which is as it should be.

Then there is the problem of woman's *emotional make-up* and its effect on her production capacity. If a woman's husband or son or sweetheart in the armed forces is suddenly sent overseas or she is notified that he is "missing," her work may slump temporarily. Also, to work efficiently she must particularly be released from anxiety over household problems and concern for her children's welfare, but once these home problems are solved, women stand the routine, grime and noise of industrial plants as well as or better than men.

There is a higher rate of *absenteeism* for women than for men, and this is due to illness or fatigue, or such personal matters as home responsibilities, housing shortages and transportation difficulties. The bottleneck produced by such absenteeism is being combated through a sound program of cooperation in meeting the worker's problems, including (1) efforts to facilitate shopping and the care of household responsibilities, by planned hours of work, part-time work, time off for shopping, dental and medical attention, banking, etc., and (2) improvement of working conditions to eliminate fatigue.

Addition of women to plant forces has meant *considerable construction of suitable washrooms.* Most states have minimum requirements for toilet facilities of specified sizes, according to the number of persons employed, and some specify rest and dressing rooms with certain comfort equipment, such as cots, be provided for women, according to the number employed. The Women's Bureau ~~has~~ prepared a Special Bulletin (No. 4) supplying authoritative recommendations for such construction; the requirements set forth conform to those of the American Standards Association sponsored by the United States Public Health Service. However, in every State the requirements of the State Board of Health and the State Department of Labor

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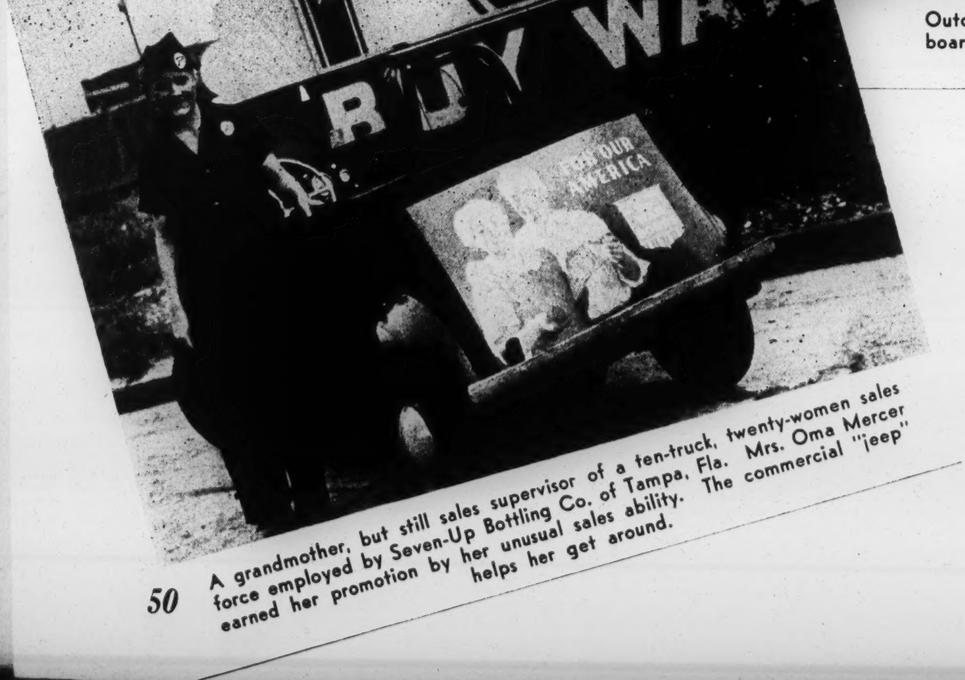
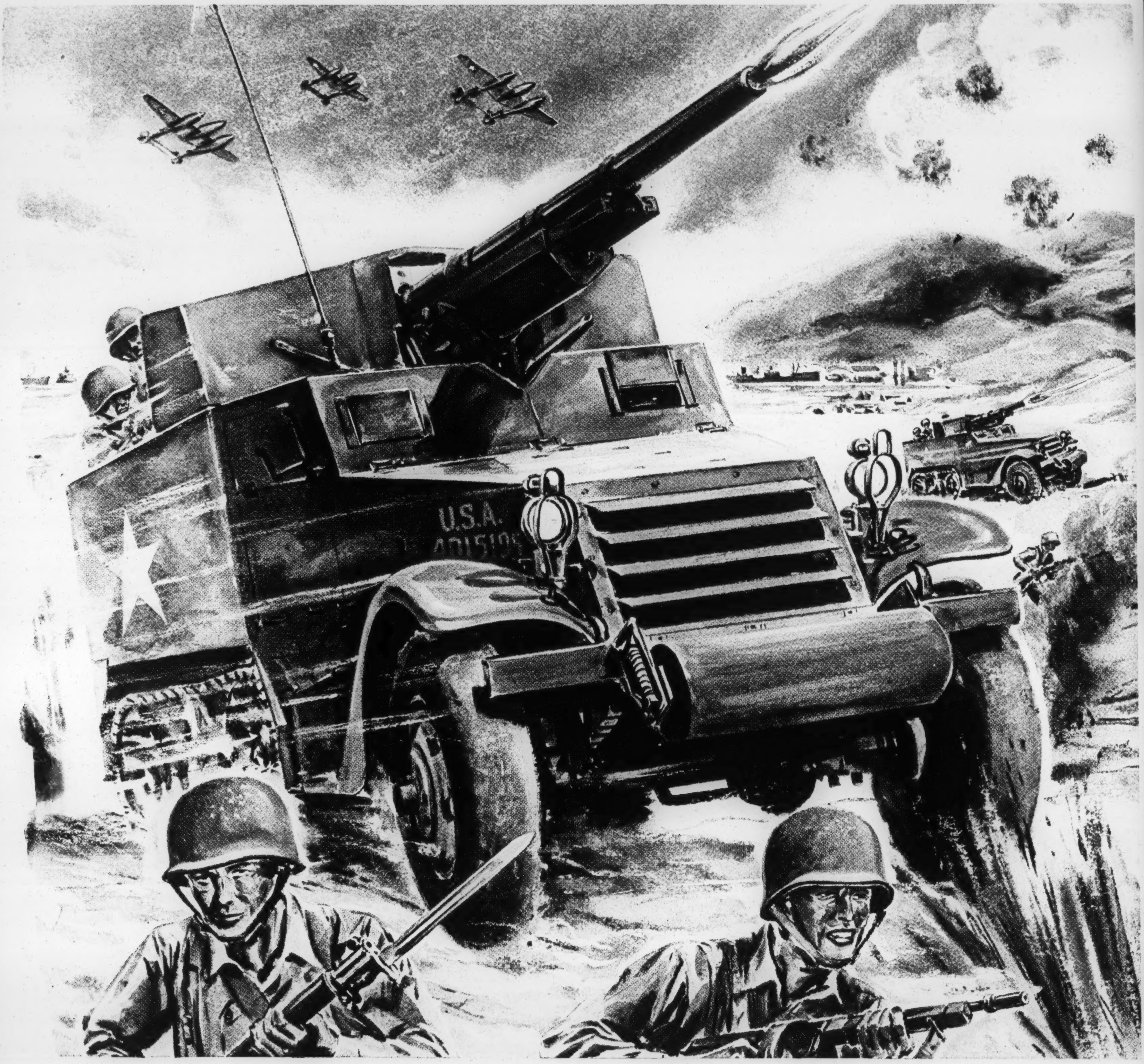
IT
LIKES
YOU

Outdoor advertising display, window dressing, billboard and poster installation and maintenance is the job performed by Mrs. Bertha Thomas.



A grandmother, but still sales supervisor of a ten-truck, twenty-women sales force employed by Seven-Up Bottling Co. of Tampa, Fla. Mrs. Oma Mercer earned her promotion by her unusual sales ability. The commercial "jeep" helps her get around.



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With horsepower below and firepower above, Half-Tracks by Autocar lunge and plunge in war's fiery cauldron . . . piercing enemy positions on the ground . . . pounding planes from the sky. They are powerful as bull elephants, yet nimble as polo ponies. For they are still Autocars . . . a preview of the power and performance you may expect in Autocar *Trucks* when this global mess is cleaned up. In the meantime, let Autocar's Factory Branches help you keep your pledge to the U. S. Truck Conservation Corps.

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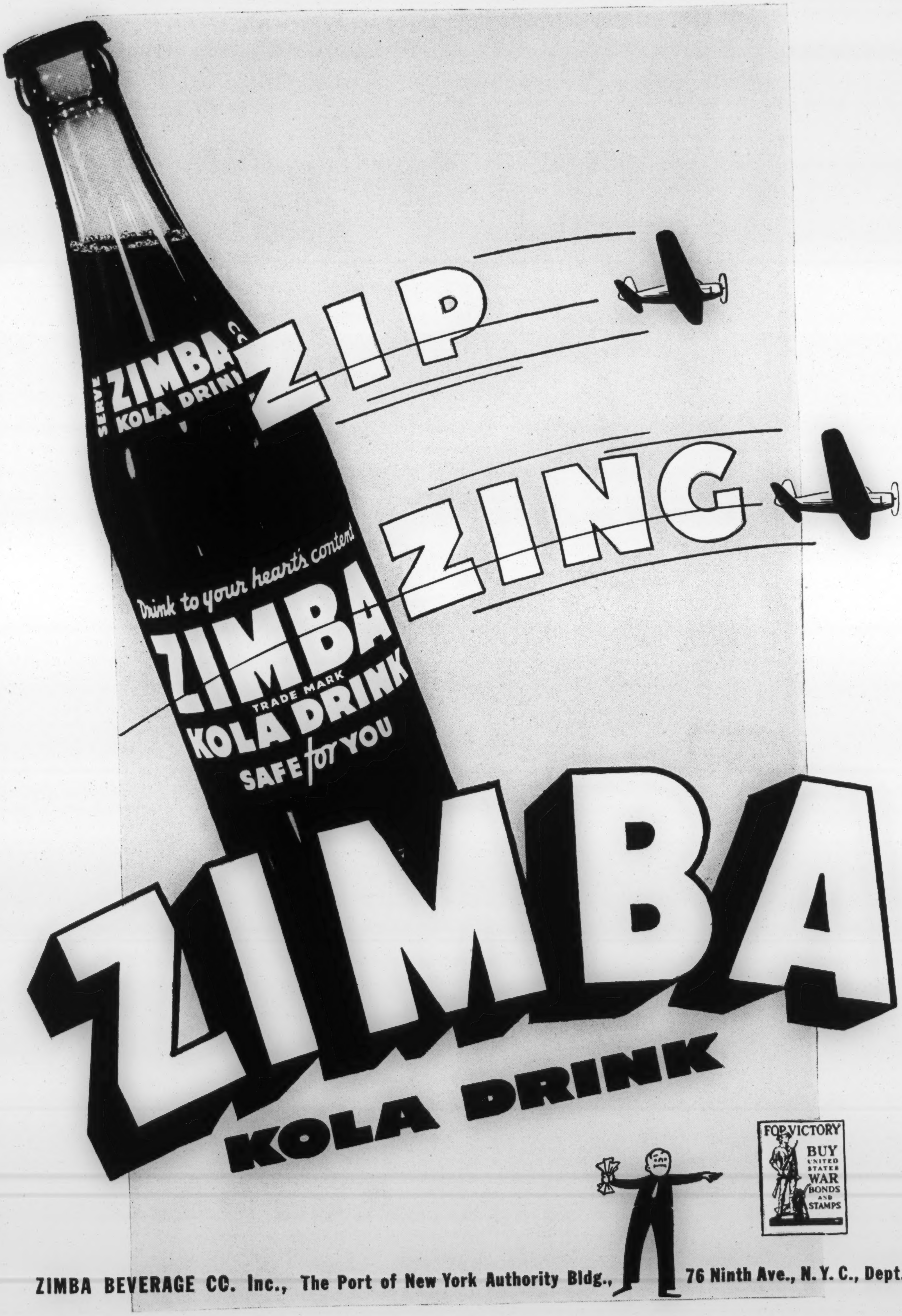
SERVICED BY FACTORY BRANCHES FROM COAST TO COAST

"For Excellence of Production"

George Roland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ZIMBA BEVERAGE CO. Inc., The Port of New York Authority Bldg., 76 Ninth Ave., N. Y. C., Dept. B should be consulted in preparation for any building program.

Type of Work for Which Women Are Qualified

Now that we have seen that there is actually a place in the bottling plant for women (despite the fact that their employment presents new problems), let's find out where it is.

Any company that is hiring women for the first time, or employing many additional ones in jobs previously done by men, should survey the plant carefully to determine what jobs can be handled safely and effectively by women and what jobs or machine processes must be adapted to woman labor by re-engineering; it should study the State and Federal requirements pertaining to the employment of women and determine where the training of women should be given; it should establish employment policies and procedures for occupations in which women have never been employed, to assist women in adjusting themselves to jobs in this industry.

It is generally acknowledged that women are excellent at work which requires: (1) close, continuous attention; (2) nimble fingers; (3) patience; (4) keen eyes; (5) average physical strength, and (6) adaptability.

Woman may be shorter and lighter in weight than man, and weight for weight she can lift only half as much, or a little more, as can her male associate. But, on the other side of the ledger, women as a whole have been found more amenable to discipline and direction and more capable at performing certain tasks than are men. They usually make up in interest what they lack in ability, and that makes for accomplishment. Industry has found that men show more initiative, but women show more ingenuity.

Of all the bottling plant jobs done by men the following can be done by women:

OUTSIDE:

1—Advertising, merchandising, cooler maintenance, and delivery (with or without the aid of a helper).
2—Checking of trucks about to be unloaded and checking of trucks that are being loaded.

INSIDE:

1—Sirup-making — after all, this is only an enlarged kitchen or cooking job and the cleanliness required for the work is natural for women.
2—Inspection of bottles, as they come out of the soaker, for cleanliness — this is one of the best jobs for women, since they are far better at the routine, monotonous type of work.
3—Inspection at the crowning machine.
4—Inspection at the labeling machine.
5—Hand-feeding the filler (when necessary)—this is a hard, steady job and workers should change every half-hour; use extra relief (perhaps three women to two men).
6—Hand-feeding the soaker with bottles to be washed.
7—Transferrring filled bottles to cases, or passing filled bottles to packer—this job is usually easy for women, but quite steady and monotonous.
8—Quality control and maintenance tests (including tests of soaker solution, finished beverage, water, etc.)— laboratory testing has been recognized widely as a type of work on which women and girls are capable.
9—General cleaning (of course, women have always been doing this).

OFFICE:

1—Stock inventory, bookkeeping, and all other office work, including checking sales and routemen (customary for many years).
2—Personnel administration.
3—Production planning control.

Select Women Employees with Care

Admitting that you have a place for women in your plant, it is essential that care be taken in their selection and placement. Putting the right person in the right place at the start is a long step toward maximum output. Haphazard hiring policies, like unsatisfactory conditions on the job, result in inefficient employees, excessive absenteeism, and higher labor turnover. Most plants hired women with their fingers crossed, but the majority of them (those that exercised care in selecting and training their employees) have been well repaid.

First of all, get a woman who is not afraid to get her hands dirty, one who is not afraid of hard work. Experience has shown that it pays to hire only those women who fully meet the requirements of a job; and, if they have minor children or adults who need care, they should make adequate arrangements to provide for them. The Bridgeport, Conn., plan is for personnel managers to employ no mothers without finding out if provision has been made for caring for children. If the mothers have no arrangements, they are referred to the Department of Public Welfare for help. Most plants find that, when children are properly cared for, married women and those with dependents are excellent workers.

All women applicants should be given a thorough pre-employment physical examination. The examining physician should be furnished complete information regarding the job for which the applicant is considered, so that the candidate can be placed most advantageously. Some companies use aptitude, intelligence, and achievement tests in making placements, to insure best use of native abilities and interests. A number of independent agencies do test and consultation work of this nature. The U. S. Employment Service has prepared a special series of aptitude tests as a means to determine what types of jobs women applicants are likely to fill most effectively.

Training and Supervision of Women Employees

After you have selected a woman that seems to meet the requirements of a particular plant job, specific training and careful supervision for the learning period are very important in developing an efficient worker. Any woman with normally active mind and good health can learn to do most of the jobs open (or likely to be open) to women in a bottling plant. Such a job may be heavier, harder and more exacting, but no more difficult to comprehend than most household chores.

Supervision of women workers in plants in which the female contingent has been enlarged by the demands of the war effort has presented a problem that is particularly trying to an organization lacking broad experience with that type of help.

However, supervision of inexperienced women is very important and they usually require more supervision than men do when new on the job, until the training period is over. Employers who have had most experience with women workers say that women usually respond better to male supervision, but that a woman group leader is an almost necessary requirement because she understands women's troubles and can be talked to more easily.

If the supervisor is a woman, she must be (1) thoroughly informed regarding work operation, (2) temperamentally experienced in handling women, and (3) well versed in plant safety rules, and know what the standards are for physical requirements of the jobs under her. A woman supervisor or job leader or foreman can command respect best when she can do every job under her leadership better than those she supervises.

With women in the bottling plant, more attention will have to be given to such circumstances influencing their work as proper work clothing, eating facilities, etc. This has brought about the employment of a "women's counselor" in the larger plants; in the smaller plants the same assistance can be given the workers by the forewoman. The counselor is a link between the women workers and the management; she interprets company policies, safety regulations, and the rules of conduct.

Working Conditions Must Be Watched

Good working conditions and reasonable hours promote efficiency, particularly with respect to women employees.

Good housekeeping is one of the most important phases of plant operation, contributing as it does to accident prevention, work efficiency and employee morale. Good housekeeping should be maintained not only in work areas, but also in toilet, rest, dressing and eating rooms. Women usually not only respond to good housekeeping but they improve it by their own efforts.

Closely allied with good housekeeping should be an active *health* and *safety program.* The following hints for plant workers should be stressed and carried on the bulletin board: (1) Keep fit. (2) Get plenty of rest and sleep. (3) Form good habits of eating, drinking, thinking, working, and playing. (4) Eat a good breakfast before you come to work. (5) *Do not wear rings or other jewelry on the job.* (6) *Wear clothing safe for the job you do.* (7) When the job requires it, *protect* eyes, hands, arms and *hair.* (8) *Work shoes should have good soles and heels that are broader and lower than street shoes.* (9) Avoid strains in lifting; use the leg muscles instead of those in the small of the back. (10) Go slowly on all steps and stairs. (11) Wet and cluttered floors are dangerous. (12) Never neglect a cut or scratch, it might cause infection.

When women work near moving machinery their *clothing* should be close-fitting enough not to catch in the machinery but not tight-fitting or short; should be reasonably comfortable in any temperature, easily laundered, and designed not to catch dust or dirt. Wide skirts, jewelry, cuffs, ties, loose belts, flowing sleeves, outside jackets and pockets are hazards on any plant job; and thin-soled, high-heeled, narrow-toed or toeless shoes are especially dangerous on wet or slippery floors and on stairs. Around moving machinery, hair should be completely tucked under a safety cap.

Generally, women obey safety rules better than men, plant officials report. By nature, they approach a machine more cautiously and hence do not have as many serious accidents. But there is one safety rule that employers have had difficulty in enforcing among women: they do not like to have their hair tucked up under a cap. However, for safety sake, employers should be firm in seeing that the underscored regulations are followed. An employee who repeatedly breaks the rules must be disciplined wisely, possibly in extreme cases suspended.

Eliminate Fatigue and Promote Efficiency

Since medical science and production records establish the fact that efficiency depends upon health, and that a proper and sufficient amount of *food* is imperative to insure women workers' continued health and ability to stay on the job, the eating habits of employees are becoming more and more a major concern of industry. Women, especially, must be deftly guided to "eat to work" rather than to eat

SUNRIPE STRAWBERRY
Zesty imitation flavor. A 2-oz. emulsion, with color included. Popular favorite with young and old alike.
$3.50 PER GAL.
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$7.00 PER GAL.
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ESTABLISHED 1872
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BEVERAGE CASES

Stop Discarding Old Cases . . .
that still have some service left in them. Take care of them, and make them last "for the duration." We can supply only a limited number of KEE-LOCK CASES for essential replacements.
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Fort Worth, Texas

to maintain a certain silhouette, and allowed adequate eating time—not less than 30 minutes for lunch. Another requisite to the maintenance of health and elimination of fatigue is the provision for occasional rest pauses, especially on monotonous jobs. Ten minutes in the middle of each 4-hour period usually is adequate, if facilities for rest and refreshment are convenient. After 20 years' investigation, British authorities state that a pause of 5 to 10 minutes about the middle of the work spell was found to increase output by 5 to 10 percent, and to be appreciated by the workers.

When daily and weekly *work-hours* are too long, the rate of production tends after a period to decrease, and the extra hours add little or no additional output; the quality of work may deteriorate during the whole period of work, not only during the hours of overtime; absenteeism rises sharply; the loss of time due to accidents and illnesses tends to increase. Industrial surveys indicate that the 40-hour week is the most satisfactory operation for women. However, in the wartime emergency a schedule for sustained efficiency may be maintained with a 48-hour week, but more than 48 hours per week induces absenteeism, and may result in fatigue and accident.

Wise management provides working conditions that will reduce fatigue to a minimum and keep workers as close as possible to peak production throughout the day. Adequate *seating* is one of the conditions that such a management will provide. Alternating from sitting to standing diminishes fatigue. If careful analysis of the job shows that posture variation by use of alternate sitting and standing is not possible, rest periods should be introduced.

Women Are Assuming a Permanent Place in Industry

In the vastly altered industrial picture of wartime America, with its relocations and dislocations, women are assuming more dominant roles. And it is a tribute to the industrialists that they have accepted this almost fantastic conversion of manpower to womanpower with such grace.

Large plants are training forewomen instead of foremen; they are establishing special training courses geared to the inexperienced woman; special thought is being given to the problems of housing, to problems of child care. More attention should also be given to better training and upgrading of workers.

Industrial States have, for the duration, modified their laws limiting hours and conditions of work for women "in special cases." Twelve States have laws prohibiting or limiting night work for factory women, 39 States have weekly hour limitations, and there are countless regulations about seating, lifting, and rest periods. But provision has been made in the war emergency for night shifts, for stretches of 7-day-week work.

It looks, therefore, as if there is a definite place for women in every bottling plant, and you can help stabilize your business in the present emergency if you will find out just where you can best place women and start training one or two (or more) to fill possible vacancies.

So, you see, it *can* happen to you—and, in the final analysis, you may be glad that you took women into your plant. Anyway, good luck!

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2. More important than price is the quality of these Oils. For almost a half century the M M & R label has stood for top quality.
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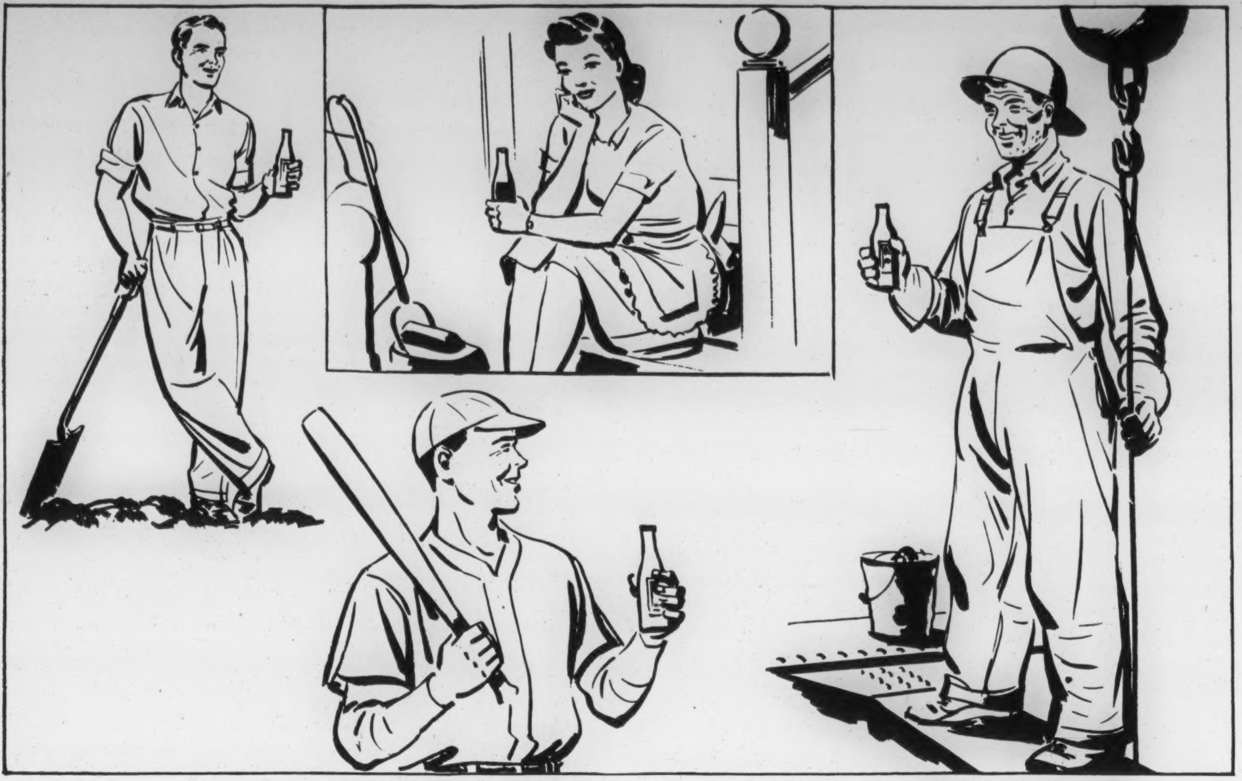

Considerable water is lost through perspiration during physical activity. A refreshing soft drink helps replace that lost water.

Health and Liquids

IT IS of paramount importance that the human body receives regularly all of those materials which help to build and repair tissues and also yield heat, energy and muscular power.

To fulfill these needs, it is necessary to eat the correct proportions of carbohydrates, fats, proteins, vitamins and minerals every day. A proper and balanced diet also requires a daily quantity of liquid intake sufficient to satisfy the body's functional requirements.

This article is a discussion of the necessity for adequate daily water intake, based upon the natural and necessary presence of water in the body; the chief functions of such water; how it is eliminated; the results of deprivation; the average daily loss of water from the body; and how it can be replaced.

The information is of importance to all bottlers of soft drinks, since they are in the business of producing palatable, refreshing and energizing beverages, the daily use of which is helpful in maintaining the required liquid intake. The material is reprinted from the booklet of the same name, published by A.B.C.B., from which complete copies can be obtained.

Health was once defined as not only absence of disease, freedom from defect or postponement of death, but a positive accomplishment in which we enjoy and use to the full, in happiness and strength, the well controlled powers passed on to us with the gift of life.[1] This state cannot be enjoyed, however, unless we consume an adequate diet—one that allows and promotes the best possible functioning of the whole body.

In order to insure the best possible functioning of our bodies, we must periodically replace that which is used up in the action of life or the processes of living. The five basic essentials for this replenishment are air, water, food, sleep and exercise.

Importance to Life

Water is considered second only to oxygen in importance to the body. It is the basis of all the fluids that are perpetually circulating throughout every organized and animated animal or vegetable body. It constitutes the greatest part of the blood and is the primary solvent of all the nutriment which the body receives from without.[2]

Of the dietary constituents furnishing no direct energy to the body, however, water deserves first mention. It is not classed as a nutriment in the sense that it gives energy as do carbohydrates, fats, etc., or that it controls growth or regulates activity in the way that vitamins and minerals do. Nevertheless, it does contribute in its own way, is a constituent of many foods, and should be used generously as drink in order to maintain the fluid character of the blood and tissue spaces.[3]

The body receives water from three main sources: ingested fluids, water contained in solid foods and water produced in the chemical reactions of metabolism—metabolism being the physical and chemical changes in living cells by which energy is provided for vital processes and activities, and new material is assimilated to repair waste. In spite of the fact that nearly all of these metabolic processes in the body produce water, a substantial quantity must be ingested to maintain a health-giving water balance and furnish a means of excretion of metabolic end products.[4]

Water in the Human Body

Few people realize that approxi-

[illegible]

[illegible]

ADVANCE RELEASE ADVANCE RELEASE

ADVANCE RELEASE: For Sunday Papers, July 25, 1943
Pfeiffer -- 75012

OFFICE OF WAR INFORMATION

(Editors: This is the last of a series of releases on women in men's jobs. Photographs to accompany this article are available from the Media Division, Room 3540 Social Security Building, 4th and Independence Ave., S.W., Washington 25, D.C.)
--- News Bureau

OWI-2213

Women of all ages and with backgrounds as varied as a complex country can offer have been signing up for jobs by the hundreds of thousands since the war began and the demand for women continues unabated. In labor shortage areas, virtually any woman who wants a job can obtain one. In other areas, although the need is less acute, there are many types of jobs for both experienced and untrained women.

That age is no handicap in contributing to the war effort is exemplified a 70-year-old Colorado woman who turned the dining room of her house into a classroom for boys about to undergo Navy training. For twelve hours daily she held classes in ocean navigation and as the result of her teaching more than 50 boys passed the Navy courses without a single "washout". Prior to her self-imposed assignment she sailed many years with her husband, a wealthy yachtsman, and was a fourth mate for one trip on a freighter plying between New Orleans and Africa.

Young women are in great demand, too, as evidenced by the experience of one eastern women's college which reported that 42 percent of this year's graduates had accepted jobs in essential industries before receiving their diplomas. The holder of a Phi Beta Kappa key from a middle western college stepped straight from the campus to a job with a tool company in Chicago. When asked why she had not sought a job more in keeping with her academic attainments she replied, "This is the job I wanted -- because, you know, there's a war going on."

Another college graduate employed by the same company has been handling a milling machine in the daytime and studying law at night. Born in China, she was educated in this country and put herself through college by operating a switchboard and teaching archery.

"I like this work much better than I would like office work," she said of her tool company job, "I get a little exercise here and besides, I'm helping to produce war materials!"

A still younger girl was faced at the age of 19 with the problem of supporting herself and her year-old son when her husband was drafted. The job of her choice was that of caboose inspector on the New Haven Railroad which means working out of doors in all kinds of weather and covering a two mile area. "I thought that if my husband were to be on the fighting front," she said, "the least I could do would be to get a job on the 'home front' where railroads are doing such an important job. Then, too, there was the problem of supporting my baby and myself. I'd never had a job before, but I really enjoy working."

The foreign-born population of the country has long been noted for the part it has played in our national life and the members of this group have turned all their efforts to the war.

Although she speaks and reads English imperfectly, a Polish born widow has put three sons through high school, sent them off to the Army and the Coast Guard, and has herself been helping to make bombers. Her husband died shortly after they moved to Detroit and for many years thereafter she ran a sewing machine in the upholstery department of a motor company. When the company started making planes she was transferred to the bomber frame sub-assembly department and not long ago received the Army-Navy E on behalf of the women workers of the aviation division. She became an American citizen eight years ago and in recognition of that fact has been putting more than 10 percent of her salary into War Bonds every week.

Some women who are taking jobs today have had previous work experience, some of them have converted old skills to new uses and many of them have never been employed at all before.

"It was easy to learn machines," said a woman who has been turning out piston rings in a Kentucky factory. "I have always worked with my fingers. This was just a little bit tougher on them." For many years she had worked in a beauty shop in Harlan and the experience and manual dexterity she acquired while doing this work made it easy for her to learn the war job, although she admitted that "My fingers hurt a lot a first." Having mastered the new job she claimed that working with machinery was more exciting than combing curls.

Many of the women who are taking jobs for the first time are under no compulsion to support themselves and some of them are turning all or most of their salaries into War Bonds. Housewives without young children and others who have never been employed are in great demand these days since they constitute the largest untapped pool of womanpower.

Announcing that she had "very little patience with conversational patriots," the wife of a well-known Detroit life insurance agent applied at her local United States Employment Service office for a war job. They recommended that she take a 240 hour course in inspection technique which was being offered by the Board of Education. She completed the course and the following week was hired by a firm making aircraft parts. Her job has been final inspection of small motor parts -- partly visual and partly with the assistance of micrometers, gauges and other instruments. Since both her sons were in the service she had no family responsibilities and was free to take the job although she had no need of the money.

A 59-year-old widow, who had been left an estate by her husband, found that the antidote to the loneliness she experienced with her children away from home was a job as coil winder in a Chicago factory. Both sons are in the Navy and one ranked as a Lieutenant Commander at last reports. She had never held a job before but said that she was deriving great satisfaction from her factory work.

Even the handicapped can make great contributions. Some of these people have unique skills and aptitudes such as those of a blind girl who eliminated a serious bottle neck at a war plant in New Jersey. The plant was unable to obtain proper gauges to measure the thickness of mica spacers used in condensors. The superintendent called in a 21-year-old blind girl to see if her highly developed sense of touch could substitute for the non-existent gauges. She was required to tell the difference between four strips of mica ranging in thickness from five-thousandths of an inch to one and one-half-thousandths. At the end of two hours she was sorting the strips without making a single mistake and in her first day did as much work as a new girl using a gauge could do in two weeks. She and some other blind people who were subsequently employed speeded up production 1500 per-cent.

A Buffalo woman is a "sub-contractor" with a wheel chair for a factory. Her job has been that of sorting and inspecting rivets for a large aircraft plant which she has never seen inasmuch as she has been confined to her wheel chair for eleven years. She realizes the importance of helping to build planes and said that American airmen are "counting on us -- we've got to get into this thing and win."

Robinson

U. S. Department of Labor
WOMEN'S BUREAU
Washington

June 7, 1943.

caps

Work now being performed by women in the warehouse section of Quartermaster Depots.

Usual warehouse type of clerical work - keeping records of receipts, disbursements, routings, inventories, and storage stock records.

Warehouse jobs -

Fork lift operators.
Small inside tractor operators.
Checkers - both incoming and outgoing supplies.
Storekeepers - responsible for a division of the warehouse - break down shipments of lots, allocate space, fill bins and shelves, fill orders, issue and keep track of receipts, and forms and keep stock and room in an orderly state of housekeeping.

Packers - pack items in excelsior or wrapping, close and nail covers or boxes, stencil identification on outside, band or wire boxes with metal tape. The work is often broken down into a series of operat~~ors~~ions on a ~~rather~~ roller conveyor line.

Box and crate making - preparing lumber according to specified widths and lengths using Boice Crane, De Wall and Delta circular rip saws. Employed at making ends and box lids to specified sizes. Women are using simple jigs for setting up and nailing boxes. Women are reported as expert in hand nailing of boxes and covers in several departments. They are using not only power saws but hand saws, planers, files and other simple carpenter tools as needed on their jobs. Much of the work is simple, repetitive and routine but quite similar to that done by carpenter's helpers.

Messengers - Thirty small gasoline scooters are used for mail and messenger service between the buildings and warehouses and they were operated for the most part by young girl messengers.

Loading and unloading cars.
Pushing inside trucks.
Truck drivers
"Snappers" or group leaders.

Training of women workers in quartermaster depot.

Most of the work is unskilled and the only practical training possible is that which can be given on the job. Most of the women workers are given a days general orientation in the type of work to be done, work clothing, general safety measures, hours, rates of pay, responsibilities and privileges of workers. For fork-lift and tow tractor operators, a three day training period is allowed for instruction in the handling of this type of loading and storing equipment. If women have any aptitude for this type of work, they master it in three days.

Uniforms

No special uniforms are required. Most of the women wear slacks or coveralls and if care is taken by the foremen to see that women have suitable clothes for the work or exposure, they are submitted to, there is no need of special uniform. Safety shoes are needed on most of the warehouse jobs because of the ever present possibility of boxes and equipment being stacked, checked, loading, etc., falling.

U. S. Department of Labor
WOMEN'S BUREAU
Washington

June 1943.

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4-24-43

Of 7,598 persons in war plants in Richmond, 3,744 are women according to U.S.E.S. By the end of the year 4000 more workers will be needed.

(R. Palladium Apr. 16, 1943)

2-22-43

There are more than 1700 women at Norfolk Navy Yards, and Navy hopes to have 6000 by end of year. (Norfolk Virginian-Pilot 2/7/43)

6-19-43

W.M.C. has just issued a call for 15000 trained women in the Hampton Roads section.

(Norfolk Virginian-Pilot 6/13/43)

Va. Employment Shows Downward Trend

Richmond, Va. Oct. 18, 1943.

Employment of wage earners in Virginia mfg. is decreasing

(over)

WAR PRODUCTS MANUFACTURED IN VIRGINIA

- Women are probably employed in all these establishments -

(as shown by war contracts)

Richmond

Aluminum
Containers, canopies, gun carriage covers
Fragmentation bombs
Bomb trunnion bands
Packing crates and wood pallets
Paper and paper boxes
Trousers and overcoats
Arctic sleeping bags
Truck parts
Ordnance equipment
Triple super phosphate

Hampton Roads Area (Norfolk, Newport News)

Shipbuilding
Tents

Petersburg

Single vision lenses
Lockers

Winchester

Blankets and wool cloth

Lynchburg

Shoes
Socks (hosiery mills)

Danville

Cotton sheets
Cotton pillow cases
Cotton cloth

Roanoke

Pajamas
Trucks

Bristol

Ammunition loading
Shipfittings rigging

Hopewell

Gun cotton
Explosives

- - - - - - - - - - - - - - -

STATUS OF LABOR SUPPLY IN VIRGINIA (War Manpower Commission)

October 1943

Petersburg)
Hampton Roads) Current acute labor shortage

Richmond - labor stringency, and anticipating labor shortage within 6 months

Danville)
Lynchburg) a slight labor surplus will remain after 6 months

Roanoke - substantial labor surplus will remain after 6 months

- - - - - - - - - - - - - - -

In Norfolk, there are white women working in the baggage department of the C & O RR. They are checking baggage, taking in and giving out baggage from the checkroom. Negro men are employed to do the heavy lifting. The Va. Electric & Power Co. has for some time had 3 women employed as bus drivers. Women are surpassing their expectations - they are there right at 5 a.m. and are putting the men to shame - are making the men more careful about being on time. Women also handle the crowds better than the men do. Women get the same rates of pay as the men. (Feb. 1943)

NOTES ON COMMUNITY PROBLEMS - NORFOLK, VA. Jan. 1943

A large recruitment program is being made for women workers in the Hampton Roads area. This is primarily for the Norfolk Navy Yard. The government estimates there is a potential supply of 30,000 women in this section, who might be enrolled for war production jobs. If women already liwh living here can be enrolled in training classes and put to work, the jobs will be filled by persons who now are occupying the scarce living space of Norfolk, Portsmouth, Newport News, Hampton, Williamsburg, and other nearby territories. "It is cheaper to train a woman than to build a house." One estimate on the population of Norfolk was 300,000, as of Jan. 1, 1943, more than twice the number according to 1940 Census figures. This increase in population shows the urgent need for housing. There are three housing agencies and adequate housing is promised within two months - there is great expansion in housing projects.

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Other notes -

Of 7,598 persons in war plants in Richmond, 3,744 are women. (April 1943)

There are more than 1700 women at Norfolk Navy Yard, and Navy hopes to have 6000 by end of year. (Norfolk Virginian-Pilot, Feb. 7, 1943)

War Manpower Commission has just issued a call for 15,000 trained women in the Hampton Roads section. (Norfolk Virginian-Pilot, Feb. 14, 1943)

Virginia employment shows downward trend. Oct. 18, 1943: Employment of ~~xxxxx~~ wage earners in Virginia manufacturing is decreasing at the rate of about 2000 persons a month after reaching a peak of 193,331 in September of last year, State Labor officials said. The number employed at the present time was estimated at 170,000, or more than 20,000 under the record figure of last year.

Most establishments in the area have relaxed specifications so as to eliminate all unnecessary recruitment efforts. The employment of women has increased from a little over 5,000 in July 1942 to approximately 20,000, but despite the availability of day-care facilities and the willingness of employers to hire women in increasing numbers, the recruitment of women has not kept pace with the needs. A total of over 24,000 workers will be needed, to expand employment from the current 112,600 to the anticipated 128,300 by Jan. 1944, because replacement demands will be sizeable. Lack of housing in the area can no longer be blamed for retarding recruitment. There is severe congestion of community facilities other than housing, affecting stability of employment. Food is allocated to the area on the basis of 1940 population, yet estimates show one third more people now. The civilian worker is often unable to obtain a sufficiency of food, and large numbers of in-migrant workers who come voluntarily into this area do not remain long. (The Labor Market, Sept. 1943, but data pertain to August 1943.)

WOMEN WORKERS IN THE NORFOLK NAVY YARD
Feb.-March 1943

Women came into the Yard for the first time about March of 1942, and they are now in all the departments. They have taken over many jobs formerly held by men. More are being hired. A number have already advanced from the beginning jobs to more advanced work. Every woman is given a medical examination before being accepted, and an effort is made to put her on a job suitable to her -- (physical strength, relative to her height and weight, her general health, etc.) Some women have preliminary training before coming to the yard, and others are taken who have had neither past employment at something nor preemployment training. Age range is 18 to 40, with a few over 40; both white and Negro women.

Laboratory - Girls are mixing chemicals, making simple tests, and doing minor chemical work.

Power plant - Girls read instruments and record pressures, operate valves, are "doing an excellent job"

Transportation - Girls and boys ride bicycles about yard, ride small scooters or tiny autos, drive station wagons, drive small trucks - delivering small packages or papers or loads that they can handle.

Maintenance - Negro women as sweepers and cleaners, for all departments.

Forge shop - Negro girls are helpers, and operate the lever which bends the steel; girl would have to be alert and careful as lever should be operated promptly when signal given

Optical room - Girls repair field glasses, binoculars and navigators' glasses; all most particular work, vital to the lives of the men. "Some are excellent", "better than men".

Machine shop - Women "are good", "unusually good in the tool room", "much neater than men." Some Negro girls in the shop. Girls do subassembly, and assembly, on engines, assemble water pumps, and deisel engines, assemble valves and couplings, operate drill presses and turret lathes, grinders, screw milling machines, use micrometers, calipers, etc. Girls know the names of all the tools and have no trouble with any of the work. Women set up their own machines, read their own blueprints, use measuring instruments. They overhaul and test gauges, the entire job - very essential work as these gauges test and record the steam pressure, etc. In scraping and surfacing metal plates weighing up to 50 lbs., for high and low spots in order that these plates are absolutely smooth, the women detect the spots by the application of a rouge, and then use a small hand scraper to remove the high spots.

Pipe covering - Girls cutting asbestos cloth with electric cutter and sewing it with large 3-inch needle, and using pliers as well; the cloth is kept barely damp to keep down the dust; most women had on gloves or finger protectors; they fit the covers over the form and then sew it. All this is done in an inside shop, in the yard, but it was expected some of the women would be sent out on the ships to help the men in covering the pipes on the ships.

Electrical shop - Some women are being sent out to help the men install electrical wiring on the new ships, they are helpers, hold up cables, hold parts, hold tools. Some of them are helping men install diesel enginers in the small boats, are "handy men."

Crane operators - To learn the work, a woman is put in the carriage with an experienced operator, and let alone till she gets used to the height and has some knowledge of the work, then gradually taught, an operator being with them while they worked, then left alone in the carriage.

Paint shop - Negro girls pack putty in 24-lb. buckets, label and stencil the buckets.

Rigger loft - From this department women are sent out as deck hands on a 50-foot boat that travels between the Norfolk Navy Yard and St. Helena, a nearby repair base, two to a boat, to handle the lines, fasten the boat, and keep the boat clean. Some days it is cold and "wet frozen ropes would stick to their hands, but they didn't give up." This have done this since some time last fall and have gotten along "first rate."

Boat shop - Women are working as men's helpers on the small 25-foot wooden boats, built in a room up on a 3 to 4-foot staging. They hand men tools, hold parts, and do some caulking of the boats; use the step ladders as nimbly "as kittens", go up and down in the boat (the boats are about 3 feet deep, or more). They were of slight build, some not so tall, about 22 to 28 years old, had no trouble in getting about on the boats.

Gyro compass - Some here were moved from the sheet-metal shop where they had shown special skill and precision; all have had promotions, some even are 1st-class apprentices. They set up their own machines usually (highly skilled work). One was engraving a compass disc, using a plastic compass as a guide and adjusting her own work.

Turnover has been considerable. Some who came in and were signed up for jobs, left - some without ever working, some may have worked a few hours and never returned. In the tremendous expansion there are many misfits who might be adjusted in normal times, but in times such as these they simply quit without giving the yard a chance to transfer them or iron out the seeming trouble. The yard has an exit-interviewer, who tries to see everyone before they quit, but some quit with no notice. This interviewer goes into the problems and tries in every way to adjust them, through transfer to more suitable work, or change of shift, or anything that can be done.

With the men, the draft, or return to farms, or lack of suitable housing facilities for their families, are the main causes. With women, the greater majority have never worked, and now the novelty has worn out they are quitting; also lack of someone to care for their children, the household duties are harder than ever due to extra trouble in getting food, they can't get help like they formerly could, etc. Some women prefer to return to housewife duties, many of those being service men's wives who have enough to live on with what the government gives them now.

Safety clothing is furnished by the yard - gloves, and goggles where needed; welders wear heavy sweaters under overalls and jackets, all protected by "welders" sleeves" of cowhide and asbestos cloth furnished by the Navy, and the yard also furnishes the shields (face) the welders have to wear.

WOMEN WORKERS IN THE NEWPORT NEWS SHIPBUILDING & DRY DOCK CO.
March 1943

The company will substitute women on all jobs feasible for them. They are the women who have husbands, fathers or brothers in the company or who are local women - thus goodwill is built up, but more too, as this helps transportation and living problems, and company is having no difficulty in getting very good female help. No trouble from absenteeism of women, reported as "very steady."

Women were put into a number of departments on the more complicated jobs - purposely so, as the company feels that if women are given the menial jobs it at once gives them an inferiority complex. Therefore the company is using women to the utmost of their ability and in accordance with their strength and fitness for the job - a wrong approach to this might have upset their entire program. All men hsve the promise of the company that if a woman takes over their job, the man will be given a job equally good, if not better; thus the men have spared neither time nor effort in training the woman who may be taken their job; without this promise the man on the job could have made it very hard for the woman to learn the work. Negro men have been assured that if they are replaced, it will be with a Negro woman. Company is very proud that men have shown no resentment over women.

A fairly large group of women was taken in at one time, because the company thought if only a few were hired, they might not have made good and so the company might have taken that for the answer, an unfair picture, as only a small number would not be producing effectively. There is "equal pay for equal work" , thus giving the woman a chance to use their very best ability; they might otherwise not be expected to do as well as men, as they would feel inferior.

Women are not yet in all departments, there were no women welders on the ways, none on the ships. Women are crane operators, are in the machine shop division, operating various machines. They all set up their own machines. In the tool room of this division, where women were very first employed, formerly each Sunday was set off as the day to go through the files and pull out the slips that were filed wrong; usually a peach basket full of misfiled slips would be the result, but now that girls are doing this work they usually find about 15 misfiled slips. This is due to better spelling, better penmanship and more accurate filing. The girls are more serious about it, are more accurate. They have readily mastered the nomenclature of the many tools in this very large tool room. They have been promoted from the tool room to the shop offices where they order tools, write letters requisitioning tools. Girls are in hull fitting in this division, in the boiler making shop, in the sheet metal shop (makes ventilation ducts, bins, racks, etc.), in the plumbing shop, but not in pipe covering yet, in the mold loft, in the electrical shop, in the copper smith shop, but not in the joiner shop yet, in the sail loft (heavy canvas covers, making divers' suits, etc.)

Company has an elaborate safety program. Safety clothing furnished by company. Each employee gets a book on safety. Adequate first-aid; hospital with doctors and nurses open to all shifts; several small treatment rooms, nurses in attendance. Employees urged to go to hospital or treatment room at once even if only slightly injured, or for headaches, sore throat, colds, etc. All modern equipment in hospital, perform minor operations here.

M-5283 ✓

April 21, 1943

Note to Editors:

Here is a list of some necessary civilian jobs for women which might suggest subjects for September magazine covers. All the jobs mentioned here are those which the War Manpower Commission considers necessary and in which women already have begun to serve. They also represent work for which women are now needed and will be needed increasingly in the next few months.

Those magazines who wish to assign photographers or artists may write to the Magazine Division for suggestions as to places where women are actually at work on these jobs.

This listing does not include the obvious war workers such as women working in airplane, tank, or ammunition factories, and women in the military auxiliaries such as WAACS, WAVES, SPARS and Women Marines. This is because we hope through the September cover promotion to call attention to those jobs which have not been viewed up to now as war jobs but without which civilian life could not go on.

We hope that the following list, Necessary Civilian Jobs for Women, will be provocative and that you will let us know just as soon as you have selected a subject for your cover.

Dorothy Ducas, Chief
Magazine Division
Office of War Information

M-5283

Necessary Civilian Jobs for Women

Agriculture

- Canning plant worker
- Farm worker
  - Dairy work (bottlers, washers, laboratory workers)
  - Fruit picker
  - Poultry farm
  - Truck farm
- Lumber worker
- Meat packing plant worker

Communications

- Radio technician
- Telegraph messenger
- Telegraph operator
- Telephone operator
- Teletype operator

Education

- Child psychologist
- Librarian
- Nursery school attendant
- Playground supervisor
- School clerk or stenographer
- Social worker
- Teacher

Medical Care

- Clinic attendant
- Dental hygienist
- Dietitian
- Hospital attendant
- Laboratory technician
- Medical social workers
- Nurse (public health, hospital, industrial)
- Physiotherapist

Receptionist, assistants in doctors and dentists offices

Newspapers and Printing

- Journalist (editor or reporter)
- Linotype operator
- News photographer
- Proof reader

74491

Restaurants, Cafeterias, Hotels, Boarding Houses

- Boarding house manager
- Cafeteria counter attendant
- Chamber maid
- Chef
- Cleaner
- Cook
- Dietitian
- Dishwasher
- Elevator operator ✓
- Floor supervisor
- Food buyer
- Hotel housekeeper
- Kitchen supervisor
- Linen room supervisor
- Room clerk
- Service superintendent
- Steward (house, floor, kitchen, pantry, silver)
- Switch board operator
- Waitress

Retail Trade

- Baker
- Butcher
- Department store clerk (older woman - durable goods)
- Drug store clerk ✓
- Grocery store woman (clerk, cashier or delivery)
- Stock clerk
- Wrapper

Service Trades

- Carpenter
- Clothes repair service
- Electrician for repair and maintenance of household appliances and furnishings
- Household worker
- Laundry and dry cleaning
  - Checker
  - Delivery
  - Dyer
  - Hand laundress
  - Hand presser
  - Inspector ✓
  - Machine presser
  - Marker
  - Measurer
  - Sorter
  - Spotter
- Plumber
- Seamstress
- Tailor
- Typewriter repair

Technical Work

- Chemist
- Engineer
- Industrial nutritionist
- Map maker

Transportation

- Baggage clerk (at depot)
- Bus driver
- Commercial airport mechanic
- Commercial plane dispatcher
- Conductor - on railroad, trolley, bus
- Delivery truck driver
- Engine wiper
- Filling station attendant
- Garage mechanic
- Information clerk
- Milk truck driver
- Motorman on trolley
- Oiler on railroad
- Railroad track walker
- Section hand
- Stewardess on commercial plane
- Taxi driver
- Ticket taker at railroad station

"White Collar" Worker

- Bank clerk and teller
- Bookkeeper
- Cashier
- File clerk
- Stenographer (especially in industrial plants, government offices and public utilities)
- Typist (especially in industrial plants, government offices and public utilities)

PERCENTAGE WOMEN AMONG WAGE-EARNERS

IN SELECTED WAR INDUSTRIES.
APRIL, 1943

Industry	Percentage women
Airframes	37.9 (May)
Aero-engines	21.2 (May)
Propellers	19.4 (May)
Gliders	23.7 (May)
Ordnance and Accessories	
Guns	15.8
Ammunition - loading and assembly	WPB 42.3 (March)
Small arms - firearms	30.8
Small arms - ammunition	46.3
Tanks	13.1
Sighting and fire-control equipment	37.5 (March)
Explosives	15.3
Radio and communication equipment	1. 59.1
Electrical except radio and communication	38.4
Shipbuilding	5.5

Source: W.P.B. reports and B.L.S. taken from absenteeism report released July 6, 1943

1. Radio - 59.1
2. Ammunition 40.+
3. Aircraft .35

This has just come to my attention
FDR

MVR
your copy

WAR MANPOWER COMMISSION
BUREAU OF MANPOWER UTILIZATION

JOB FAMILY SERIES * NO. S-180

OCCUPATIONS FOR
HOUSEWIVES

DIVISION OF OCCUPATIONAL ANALYSIS AND MANNING TABLES - March 1943

7-1297 cover

OCCUPATIONS FOR HOUSEWIVES

As a general rule, people are prone to underestimate the skills of housewives. Theirs is an occupation in every sense of the word; the skilled homemaker performs a wider variety of duties than many men who earn the family income.

Typical of the duties that a housewife may perform are the following:

1. Hand sewing, as in patching the family clothing, the bed and table linen, or as in the finer work of embroidering.

2. Machine sewing such as in patching the family clothing, or in making her own or the children's clothing.

3. Cooking and serving meals, both for home consumption, for small parties in the home, and for organizations such as the Ladies' Aid.

4. Caring for the children, dressing and undressing the smaller ones, bathing them, keeping them amused by telling them stories and playing games with them, and disciplining and managing them.

5. Regular household cleaning, including such tasks as sweeping and scrubbing, cleaning windows, vacuuming, and dusting.

6. Washing, including both the family clothing and dishes, generally done by hand but often with the aid of washing machines.

7. Ironing, generally by hand, including both rough work and the finer pressing involved in care of clothes, but sometimes also by the use of a small mangle.

8. Home nursing and first aid, such as taking care of ill children or old folks, including such tasks as bandaging cuts, making beds with patients in them, and administering medicine.

9. Budgeting and keeping track of household expenditures, including marketing.

10. Simple repair work such as driving nails, mending light switches, electrical cords and the like, and painting.

11. In certain instances, such additional duties as caring for milk and making butter, and canning of food, including fruits, vegetables, meats, and preserves.

12. Home decoration such as planning the color scheme of rooms, making over old furniture, repapering the walls, and painting.

13. Additional duties such as tending to the furnace, driving the family car, or taking care of family pets.

14. Amusements likely to be common to all include such things as playing cards, knitting, crocheting, weaving, hooking rugs (including dyeing the cloth used), and decorative painting such as stenciling.

Following are a few of the types of jobs that housewives can do and utilize their acquired skills, such as:

HAND SEWING

In plants manufacturing military clothing:
- HAND SEWERS use needle and thread to make buttonholes, sew in linings and labels, and tack shoulder pads into place.
- BASTERS loosely tack pieces together for later machine stitching.

In plants manufacturing military hats and caps:
- HAND SEWERS do the finishing work with needle and thread.

In plants manufacturing textiles:
- CLOTH-PIECES STITCHERS sew cloth ends roughly together for various processing operations such as dyeing or printing.
- MENDERS weave missing threads in cloth with a needle.

In the making of canvas goods and in ship and boat building:
- PALM AND NEEDLE MEN do the hand sewing necessary to attach grommets and ropes to such things as tents, awnings, life-boat covers, sails, and hatch covers.

In airplane manufacturing, especially in those plants making training planes:
- WING COVERERS,
- FUSELAGE COVERERS, and
- CONTROL-SURFACE COVERERS sew cloth in place with straight or curved needles so that thread passes around structural members.

MACHINE SEWING

In plants manufacturing military clothing:
- BOTTOM FELLERS specialize in sewing hems around the bottoms of such garments as coats, trousers, and skirts.
- POCKET SETTERS specialize in sewing parts of pockets together and sewing pockets and flaps to garments, such as coats and pants.

In plants manufacturing knitted underwear:
- ARMHOLE HEMMERS fold over and stitch down the edges of garment armholes.

ELBOW PATCHERS stitch pieces of cloth to sleeves of knitted garments to reinforce the sleeve at the elbow joint.

In plants manufacturing military caps and hats:

ASSEMBLERS stitch together crowns, brims, linings, cloth facings, and other parts to make hats or caps.

ADJUSTABLE CAP SWEAT BAND INSERTERS sew the sweat bands into caps.

In plants manufacturing parachutes:

PANEL JOINERS stitch together previously assembled silk gores to form parachute canopies.

RIP CORD POCKET TAPERS stitch binding tape around the edges of parachute rip cord pockets to make neat edges.

COOKING AND SERVING FOOD

In war plants operating their own cafeterias:

BAKERS bake muffins, biscuits, and sometimes breads.

SOFT PIE FILLING MAKERS cook custards, lemon puddings, and chocolate puddings that form the filling of pies.

COUNTERWOMEN serve the food from steam tables or ice tables by dishing it up onto individual plates and dishes.

In bakeries:

DOUGH MIXERS weigh, mix, and knead by machine the ingredients for bread.

In meat packing plants:

CHICKEN COOKS kill, dress, and cook chickens and noodles to make soup and canned chicken.

SAUSAGE MAKERS weigh out ingredients, grind, mix, and cook them for use in stuffing sausages.

In canneries:

SEAFOOD COOKS cook fish and other seafood in kettles in preparation for canning.

CHERRY PROCESSORS cook and sweeten the fruit in preparation for canning.

CHILD CARE

In private homes where mothers are working:

INFANT'S NURSES tend to the care and feeding of infants, bathing them, taking them out into fresh air and sunshine, and preparing diets according to physician's formula.

In libraries and at playgrounds:

STORY TELLERS amuse children.

In stores and sometimes industrial plants:

KINDERGARTNERS have charge of a playroom where small children are cared for while the parents are in the establishment

CLEANING

In government service:

SANITARY INSPECTORS investigate the sanitary conditions existing in such places as public restaurants, markets, and retail establishments dealing in food products and report violations.

In industrial plants:

LIGHT CLEANERS polish and clean lights and fixtures.
WINDOW CLEANERS wash and dry windows, mirrors, and light shades.

In slaughtering and meat packing plants:

SWEEPERS use brooms to remove surplus salt from faces and sides of cured meats.

WASHING

In garment and textile manufacturing plants:

CLOTH SHRINKING MACHINE OPERATORS sanforize materials by running it through special machines.

In canneries:

APPLE WASHERS,
CELERY WASHERS,
FISH WASHERS, etc. prepare the food for cooking by washing it.

In dairies:

BOTTLE WASHERS prepare returned bottles for refilling.

In plants making products from metal and alloys:

WASHERS clean brass or other castings to remove dirt and grease by loading them in a basket and dipping it into vats of hot water and acid.

In textile manufacturing plants:

WASHERS clean brushes, cans, pails, or tubs of color or other matter by scrubbing with hand brush or spraying with water.

In laundries:

BLANKET WASHERS wash blankets in a rotary washing machine or in tubs by hand rubbing.

In dry cleaning establishments:

MACHINE WASHERS wash household linens, garments, curtains, etc. in a rotary washer.

IRONING

In the manufacture of knitted garments:

BLOCKERS shape knitted garments by shrinking or stretching the garment and pinning it to a steam table until it conforms to the correct measurements.

SEAM STEAMERS smooth and flatten seams of woolen garments over steam pipes.

In the manufacture of textiles:

MANGLERS operate mangles to starch and press cloth in preparation for dyeing or printing.

In laundries:

FLATWORK FEEDERS guide such items of laundry as sheets and other flatwork between the rolls of a mangle.

In plants manufacturing military uniforms:

PRESSERS smooth the garments with a hand iron.

In the manufacture of military caps:

SEAM PRESSERS press seams of caps flat by machines consisting of narrow curved iron rollers.

FIRST AID

In industrial plants:

FIRST AID ATTENDANTS give assistance to those who have had minor accidents or injuries.

In medical offices:

PHYSICIAN'S ASSISTANTS, and
DENTIST'S ASSISTANTS aid doctor's and dentist's by handing them the necessary instruments, sterilizing instruments, etc.

In homes:

PRACTICAL NURSES care for sick and injured in the absence of trained nurses.

In hospitals:

ORDERLIES, and
NURSES AIDES assist with the patients.

BUDGETING AND BOOKKEEPING

In cafeterias:

FOOD CONTROLLERS compute amounts and costs of food bought and sold to calculate profits or losses.

CASHIERS collect money for food sold and keep records of incoming cash.

In any war plant:

COST CLERKS compute the cost of producing and selling goods or of operating a working unit or group of working units, calculating individual items such as labor cost, material cost, and overhead expenditures.

INVENTORY CLERKS keep periodic or perpetual record of the amount, kind, and value of merchandise, material, or stock on hand.

SOCIAL SECURITY CLERKS keep records for company of all employee's accounts, send in requests for new forms, and keep files of all correspondence relating to Social Security provisions.

SIMPLE REPAIR WORK

In the manufacture of boots and shoes:

TACK PULLERS remove tacks holding uppers to insoles using a hand tack puller, and tack covers over uppers to protect shoes from abrasions and stains in further processing.

In the manufacture of automobiles such as jeeps:

HAMMER TESTERS taps stock with hammers to test for flaws, which will cause imperfect stock to chip, crack or break.

ELECTRIC TRY OUT MEN search for short circuits, repair broken wires and replace fuses.

BODY WIREMEN install wiring for electrical devices such as dome and dash lights using screw drivers, clips, or hammers and staples.

In the manufacture of electrical equipment:

ELECTRICAL ASSEMBLERS perform duties such as attaching electric cords to plugs or switches.

ARMATURE WINDERS wind new coils for generators and motors or insert ready wound coils and hammer them in place.

DRIVING CARS

In transportation companies:

BUS DRIVERS transport passengers from one place to another according to definite time schedules.

MOTORMEN operate street railway surface cars to transport passengers from one place to another according to definite time schedules.

In almost any industrial plant:

LIGHT-TRUCK DRIVERS drive under-three-ton-capacity trucks to transport material about an industrial yard, to haul articles from factory to post offices, railroad stations, or other places.

ELECTRIC-TRUCK OPERATORS drive small trucks powered by electric batteries to haul materials in and about the plant.

GENERAL DEXTERITY AND CAREFULNESS

In laundries:

CHECKER-HANGERS reassemble and check each customer's laundry or the net bags containing the laundry after the clothes have been washed.

In grocery stores:

GROCERY-CHECKERS prepare itemized bill for customers, using adding machine or cash register to list merchandise prices either memorized or determined from a price chart.

In mines:

PRODUCTION CHECKERS keep records of the number of containers (cars, buckets, or skips) raised to the surface, and the amount of ore contained in each, estimating or weighing the contents.

In offices of public utilities such as electricity, gas, or telephone:

BILL INSERTERS puts bills into envelopes for mailing to customers.

METER-ORDER-SORTING CLERKS sort work orders into two groups, those for discontinued accounts and those for active accounts and send the sorted material to the clerk making up the addressing machine plates so plates for discontinued accounts can be destroyed and new plates made up for new accounts.

In almost any war industry:

MAIL CLERKS prepare incoming mail for distribution by opening, sorting, and stamping time on incoming mail, and prepare outgoing mail by sealing and stamping.

MVR

Extracts from Letter of Feb. 11, 1943 to XX by Mrs. Mary B. White, War Manpower Com'n

There are two categories into which women's jobs have been divided in the figures I have - munitions industries and other essential industries. Munitions includes those industries manufacturing war equipment and supplies except for food and clothing.

There were estimated to be 1,600,000 women employed in munitions by the middle of December 1942.

Other essential industries include all food processing, the providing of war materials (mining, lumber and oil, for example), transportation, public utilities and Government War Agencies.

There were estimated to be 1 and ½ million women in these essential industries on the middle of December 1942.

Besides this there were 900,000 women engaged in agriculture, if you include that in defense activities.

There were also a comparatively small number of the auxiliaries of the armed forces by that date.

As for the number that will be needed for the coming year - here are a few estimates:

The munitions industries need 2,900,000. Other essential industries hope for 1,900,000. Agriculture wants 1,000,000 and the women's auxiliaries of the armed forces need 200,000.

These are the latest estimates that have been made up.

Specific suggestions for participation in your torn town would include jobs in any necessary civilian services (assuming that your town has no war plants) from communications and transportation to work in laundries, in grocery and other necessary retail stores, in restaurants, and hospitals and in child care. Victory gardens, of course, are also a worthy contribution to the war effort.

WAR MANPOWER COMMISSION
United States Employment Service

February 1943

RECENTLY REPORTED OCCUPATIONS IN WHICH WOMEN ARE EMPLOYED

The needs for manpower in industry have opened up for women a large number of occupations which were formerly considered suitable only for men. The first attempts to place women on such jobs were based on the analysis of occupations considered suitable for the "average" woman. As a result of these attempts a large number of women were actually placed on many jobs formerly done by men.

As labor shortages have become more severe and widespread, a more realistic approach to the problem of the placement of women has become necessary. For instance, even with reference to strength, many women can lift more than the average man. Such women should certainly be considered for jobs which require above average strength. With reference to experience and training, if experienced workers are no longer available for skilled jobs and raw recruits must be trained, women should not be barred from jobs because they lack the experience or training that men being considered for the job also lack. In other words, the placemen of women on jobs should be on the basis of individual qualifications and not on the basis of a hypothetical "average" suitability.

The degree to which women are used depends largely on the degree of labor shortage in the area. Where the male labor supply is nearly depleted, industry will be willing to try women in more and more jobs for which only men would formerly have been considered. As the need has increased, women have demonstrated their ability to fill almost any kind of job, even including certain heavy manual jobs. For example, in the northwest section of the country, a railroad company has put on a five-woman section gang, while in Denver, Colorado, fifteen women were recently hired for a section crew. Women are employed in Arizona and Colorado mines as Ore Sorters, Machine Greasers and Cleaners, Aerial-Team Operators and Sledgers. At Turkey Pond near Concord, New Hampshire, a lumber mill has been staffed entirely by women who are working as Log Riders, Log Handlers, Bull-Wheel Men, Bark Peelers, Head Saw Operators, and other occupations formerly performed by men. Even the shipbuilding industry has begun to use women in larger numbers. In a number of shipyards women are found employed as Welders, Flame-Cutters, Painters, Foundry Workers, Machine Tool Operators, Helpers for Loftsmen, Ship-Fitters, Sheet Metal Workers, Electricians, Patternmakers, and Crane Operators. A Western railroad is employing women as Engine Oilers and Wipers, Turn-Table Operators and Hostlers' Helpers. In a steel mill four women are operating giant overhead travelling cranes.

On work requiring great precision women are proving especially apt. The making of plaster molds for dies, for example, an operation so precise that the slightest variation means a ruined job, is handled expertly by women with previous experience as artists, sculptors and pottery makers. Women have proved especially capable in the work of assembling gyro-horizons and direction-indicators. These instruments, necessary for safe and accurate navigation of military aircraft, are so delicate that all assembly must be performed under strictly controlled conditions of temperature, pressure and humidity.

Following is a list representing occupations recently reported in which women are now employed. Many of these occupations have previously been considered not suitable for women by a great many employers.

Abrasive-Wheel Friction Sawing Machine Operator
Acetylene Burener Operator
Acetylene Welder
Aircraft Engine Installer
Aircraft Maintenance Worker
Airport Control Station Operator
Arc Welder
Armature Winder I
Assembler (Electric)
Assistant Superintendent (Foundry)
Auto Mechanic
Band Saw Operator
Bearing Fluxer
Bearingnizer
Bearing Repairer
Bell Hop
Bellman III
Belly Grader
Belt-Sander-Machine Operator
Bench Grinder
Bench Lapper
Bench Lathe Operator
Beveler I
Blueprint Machine Operator
Boatbuilder, Wood, Helper
Body Repairman
Boilermaker Helper
Boring Machine Operator
Braider Operator
Broaching Machine Operator
Burner
Burrer
Butcher
Buyer, Junk
Buyer, Livestock
Cable Splicer
Cabinetmaker
Car Loader
Carpenter, Finish
Carpet Cutter III
Case Hardener
Caterpillar Operator
Cement Engine Room Oiler I
Centerless-Grinder Operator
Chassis Assembler II (radio)
Chipper, Foundry
Circular Saw Operator
Coach Cleaner
Coil Winder
Conductor
Conveyor Loader
Cook, Camp (Army)
Coremaker
Crossing Watchman
Crystal Grinder, Finished
Crystal Grinder, Rough
Cut-Off Operator, (Treadle)
Cut-Off Saw Operator
Cutter, Hand VI
Cylindrical Grinder Operator
Detailer II
Detective I
Diamond-Bore Operator
Die-Casting-Machine Operator
Die Polisher
Disk-Grinder Operator
Doper I
Dotter
Draftsman, Mechanical
Drapery Cutter
Driller IV
Driller VI
Drop-Forge Operator
Drop-Hammer Operator II
Dump Grader

Dump-Truck Operator
Dynamic Balancer
Edge Grinder, Automatic
Electric-Applicance Serviceman
Electric-Bridge-Crane Operator
Electric-Gantry-Crane Operator
Electric-Monorail-Crane Operator
Electric-Motor Assembler
Electric-Motor Repairman
Elevator Operator
Engine-Lathe Operator
Engine-Lathe Operator, Automatic
Engraver-Machine Operator
Estimator, Building Materials
External-Grinder Operator
Eyeletter V
Filer I
Filling-Station Operator
Firearms Assembler
Fitter IV
Flagman III
Form Builder I
Forming Press Operator
Frequency Lapper
Furnace Helper
Furniture Assembler
Fuselage Assembler
Gager
Garage Mechanic
Garbage Collector
Gateman IV
Gear Cutting Machine Operator
Gear Generator Operator
Gear Hobber Operator
Gear-Shaper Operator
Glueman III
Graphite Mold Preparer
Greaser (Threaded Parts)
Greenskeeper I
Grinder
Grinding Machine Operator
Guard
Hand Miller Operator
Hand Sander
Hardener II
Hardness Tester
Heat Treater II
House Mover
Hydraulic Bench Assembler
Iceman
Ice Puller
Ice-Scoring Machine Operator
Inspector, Electric-Connection Plugs
Inspector, Machine Shop
Instrument Man IV
Internal-Grinder Operator
Jig-Builder, Metal
Laborer (Model & Pattern)
Laborer, Process (Clock & Watch)
Lapping Machine Operator
Laundry Worker (All-Round)
Lens Grinder (Spectables, Watch, and Crystals)
Lens Polisher (Optical Goods)
Livestock Auction Lot Helper
Locksmith
Locomotive Wiper
Lubrication Helper
Lumber Handler
Lumber Tier
Machine Gun Instructor
Machinist II
Mail Carrier II
Maintenance Mechanic
Maintenance Painter
Manager, Production I
Marine Electrician
Masker
Meat Cutter Apprentice
Mechanical Engineer, Junior
Meteorologist
Meter Repairman
Milling-Machine Operator
Milling-Machine Operater, Automatic
Molder Helper III
Motorcycle Driver, Delivery
Motorman
Mule Spinner (Textile)
Multiple Spindle Drill Press Operator
Office-Machine Serviceman
Oiler I
Ordinary Seaman
Ordnance Tester and Gager
Ore Sorter
Outsider, Upholsterer
Oven Unloader (tinware)
Overhead-Electric-Crane Operator
Painter
Painter, Boat, Rough
Painter, Spray
Painting-Machine Operator
Paperhanger
Patternmaker

Pickling Operator
Pin Girl (bowling alley)
Pipe Coverer
Pipefitter
Planer Operator
Plant Guard
Plaster Molder
Plate Worker
Plating-Tank Operator
Plexiglass Former
Plumber
Police Sergeant, Precint
Polishing-Machine Operator
Power-Machine Operator
Power-Shear Operator I
Presser (Army)
Printer VII
Profiling-Machine Operator II
Propeller-Mechanic Helper
Punch-Press Operator
Radiac-Saw Operator
Railroad-Bed-Maintenance Man
Railway Coach Cleaner
Refinery-Equipment Operator
Resaw Operator
Rifle-and-Pistol-Shooting Instructor
Rockwell-Hardness Checker
Rolling-Mill Laborer (Non-Ferrous)
Rotary-Furnace Man
Routeman I
Router Operator I
Sand Blaster I
Sanitary Inspector
Saw-Filer, Machine
Screw-Machine Operator
Screw-Machine Operator, Automatic
Screw-Machine Operator, Hand
Seaming-Machine Operator IV
Section-Laborer
Selvage-Machine Operator
Sensitive-Feed-Drill-Press Operator
Sewing-Machine Operator (Heavy)
Sewing-Machine Repairman
Shaper Operator
Sheet-Metal-Fabricating-Machine Operator
Sheet-Metal Worker
Shipfitter
Shipwright Apprentice
Single-Spindle-Drill Press Operator
Slat Lifter, Venetian Blinds
Solderer
Sorter (Castings)
Spray Cleaner
Stamping-Press Operator
Station Attendant
Still Operator
Stillman II
Stove Assembler
Straightener, Hand (machine tool)
Straightening-Press Operator
Substation Operator
Surface-Grinder Operator
Sweeper
Tack Splitter
Tank-Instrument-Panel Bench Assembler
Tank-Wiring Electrician
Tapping-Machine Operator
Taxi Driver
Teacher, Arc Welding
Teamster
Telegraph Messenger
Template Maker III
Template Maker IV
Thread Burner
Thread Grinder
Tinner I
Tire Builder
Tire Retreader
Tool and Cutter Grinder
Tool Crib Attendant
Tool Designer
Tool Hardener
Tool Maker
Torpedo-Boat Assembler
Tracer
Trackman
Tractor Operator
Trailer-Truck Driver
Trim-Off-Saw Operator
Trim-Saw Operator
Truck Driver
Truck Loader
Tube-Machine-Operator Helper
Turret-Lathe Operator
Typewriter Serviceman
Universal-Winding-Machine Operator
Universal-Woodworking-Machine Operator
Upholsterer II

Vein Pumper
Warehouseman
Washer (Army)
Wax Impregnator
Welder, Acetylene
Welder, Arc
Welder, Roller Seam
Whistle Punk
Window Washer
Wire Drawer
Wire Sander
Woodworker
Working Foreman (Toolmaker)
Yarn Winder

U. S. Department of Labor
WOMEN'S BUREAU
Washington

Estimated Maximum Number of Women Wage Earners Employed During 1943' in Selected War Industries

		Women	
		Number	Percent of total
Aircraft (incl. airframes, gliders, engines, propellers)	Nov. 43	361,000	35.1
Instruments (sighting and fire control)	Sept. 43	40,000	38.8
Artillery Ammunition	Aug. 43	117,000	43.0
Small Arms	Aug. 43	39,000	36.4
Shipbuilding	Dec. 43	155,000	9.9
Machine tools	June 43	15,000	13.0
Electrical	Oct. 43	351,000	47.8
Small Arms Ammunition	Aug. 43	98,000	49.5
Guns and Cannons	Aug. 43	25,000	17.4
Bag and Shell loading	Aug. 43	41,000	42.6

~~Do not use says TSN~~

Source: B.L.S. confidential and unpublished reports.

'; Based on ~~the~~ month's employment – showing ~~highest~~ maximum number in each case

Not to be typed & given out - says IAS as calculations on numbers are WB estimates from several sources and we could quickly be questioned by the agency whose own estimate did NOT agree with ours. Can be used circumspectly.

OCCUPATIONS + INDUSTRIES - 1944

FIRST PROOF

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Women at Work

By La Verne Bradley

THE balance of power rests in women's hands. Literally.

Behind the whine of sawmills and roar of blast furnaces, the hammer of arsenals and thunder of machine shops—in shipyards, factories, foundries, slaughterhouses, and laboratories—women are manipulating the machinery of war.

They work the giant hydropresses and stamping mills whose heavy weights are constantly pounding, pressing, shaping, disgorging the materials of battle. They operate drop hammers, punch presses, turret lathes, milling machines. They hold rivet guns, blowtorches, drills, files, micrometers, templates, and test tubes.*

For three years they have laid down blueprints, welded seams, and picked up battle gear, put it on wheels, and carried it for proving. Then they've inspected, tested, proved it, and delivered it for war.

At the same time, they've worked to keep their homes or set up new ones under makeshift conditions in strange places.

About a third of America's manpower today is womanpower. That's more than one out of every three women in the United States. Of the millions handling the big tools and machines of industry, one-half are there only because of the war.

Approximately one-third of the 16,500,000 women holding jobs in the spring of this year were not even interested in such work in 1940! Many had never seen a factory, never hammered a tack, never worked before at anything outside the home.

In Aircraft Production

A week before Pearl Harbor you could walk through the factory rooms of any aircraft company in the country and rarely find a woman on the production line. They were a fraction of one percent of the total labor force.

Official source [illegible]

Two years later, 475,000 women made up nearly 50 percent of the industry. More than 45 percent of the workers for Douglas Aircraft are women. And in the first 12 months that the output of B-17's was doubled, nearly half the men at Boeing necessarily were replaced by completely inexperienced women.

These figures can be matched throughout the entire industry.

"Long before there was a manpower shortage we began to employ women on the assembly line," said Glenn L. Martin, builder of famous fighting and patrol bombers. "We were one of the first aircraft companies to employ women in mechanical capacities.

"However, it was an eminently successful experiment. There will always be a place for the skilled woman worker in the aircraft industry. Many jobs she performs as well as men, and some she performs better.

"Today, approximately 35 percent of the productive workers building Martin combat ships are women. Soon we look forward to seeing this number vastly increased, as more and more of our younger men are called up for military duty.

"We have women helping design our planes in the Engineering Department, building them on the production line, operating almost every conceivable type of machinery, from rivet guns to giant stamp presses.

"The presence of so many women has had an excellent effect upon production. They have set production records that are a challenge to men, and there's something about a woman beating a man at his own machine that he just cannot stand" (page 198).

"Bombs Away, Beautiful!"

As I walked into the shop where the giant *Mars* was built and where great PBM-3's were lined up for final assembly, I heard a man's voice calling out from the cavern of a huge wing, "Bombs away, beautiful!"

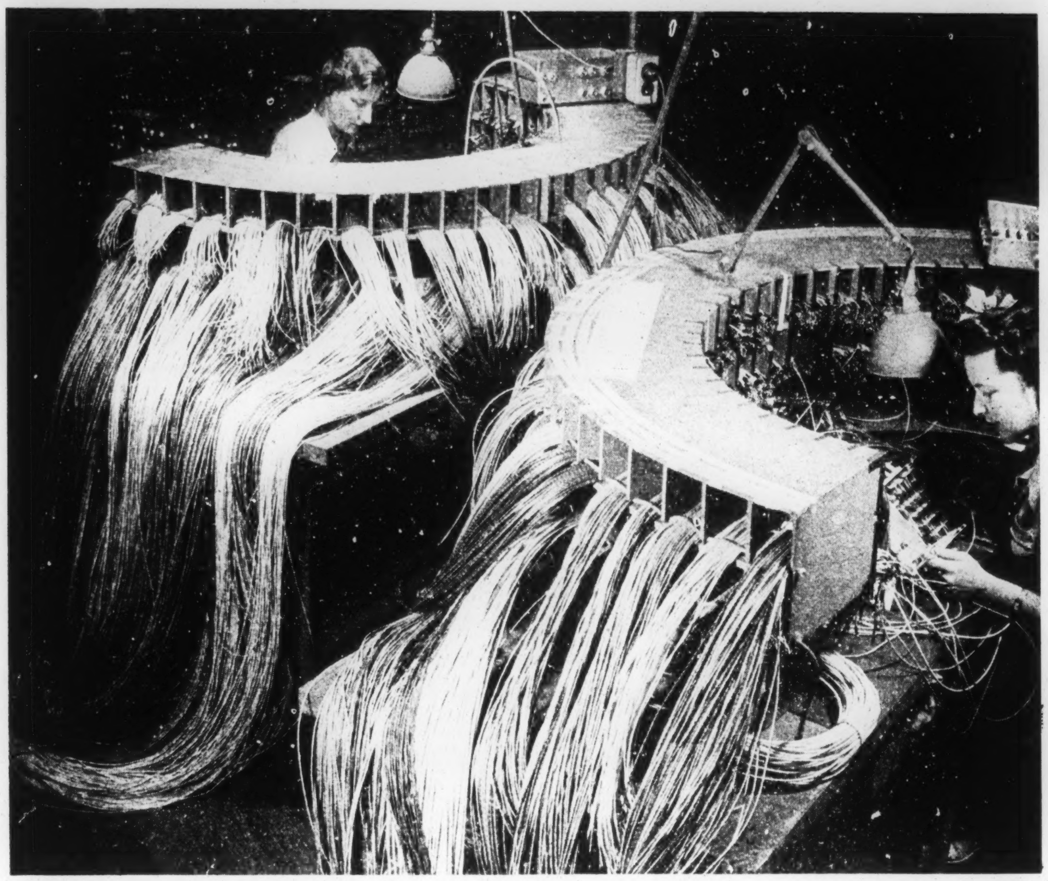
Straddled over a truss in the bomb bay, he was checking shackle releases as a girl down in the depths of the ship fired an electric gun and kept tab on the panel flashing salvo signals—single bombs, bombs in sequence, wham, bombs away.

Usually two girls do this alone, calling back and forth by interphone from one remote end of the ship to the other. I watched them swing up through compartment hatches and scramble over spars and beams like cats.

Martin has also an all-girl test crew, which went into action for the first time on an icy morning this last December. They had put in months of training for one of the most crucial jobs in the business, the final ground testing and adjusting of every functioning part of a patrol bomber. Engine, instruments, controls—theirs is the final check before men take it aloft.

Through acres of bombers and chopped-up parts of bombers, silver, brown, and green, we made our way from one roaring assembly line to another. At one point we stopped to speak to a small taffy blonde, wearing a

*See series of reports on women in war industries, Women's Bureau, U.S. Department of Labor



U. S. Navy, Official

Benches Like Pipe Organ Consoles Help Women Make up Wiring Systems for Training Planes

Consolidated-Vultee uses this system for sorting and classifying the hundreds of lengths of wire required in the modern plane. Other workers place the wires in pigeon holes according to length and color. Then these women number the terminals and send them to the assembly line.

blue hair ribbon, and sitting in the midst of hammering machinery, her feet propped up on a bench, reading a book.

It was her lunch hour and the book, *Pneudraulic Power Machines and Riveters.* One of half a million housewives who had never been in a factory, she suddenly figured a couple of years ago that maybe the talents of her toolmaker father might be developed in her. They were.

Occasionally you find a woman such as Anne Hollman, and you don't forget that she is 46 and helps make one of the hottest fighter planes in the Army. She is the only woman flash welder in the East. And she is an Amazon.

In the last war she was a machine operator in a knitting mill; then she did housework for 20 years. Now she is back, master of a difficult trade and proud of her skill, towering over her bench by the hour as she stands welding ends onto control rods for Republic Thunderbolts.

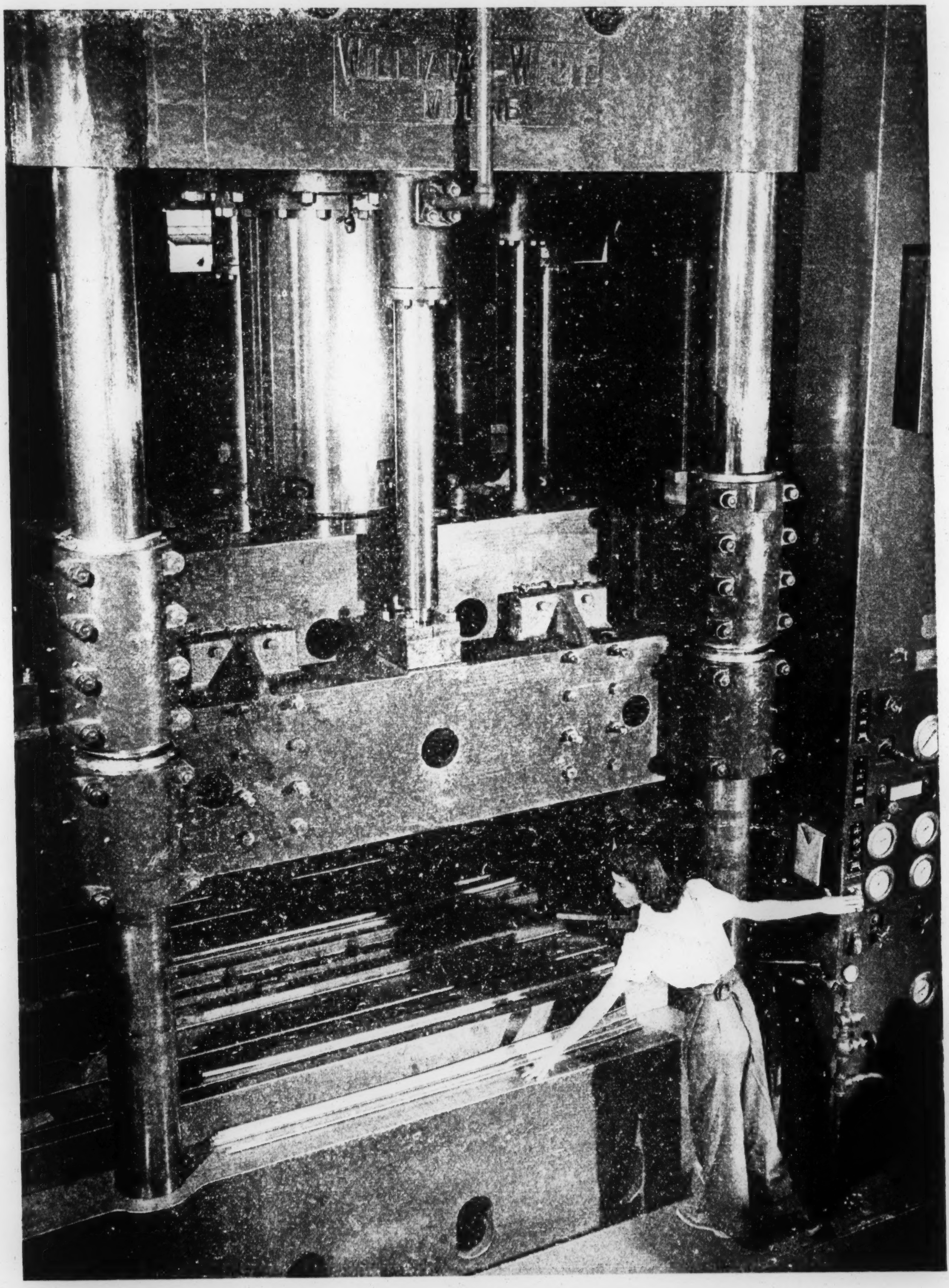
In one section the foreman had said, "When the first woman is sent to my shop, send my release with her."

Some months later, I mentioned a few of the usual objections to women in industry—57 percent of man's strength, 68 percent of his resistance to fatigue, etc.—and this same foreman defended them hotly. He specifically pointed out the girl who was turning out five assembly units to her male predecessor's two.

Womanpower in Shipyards

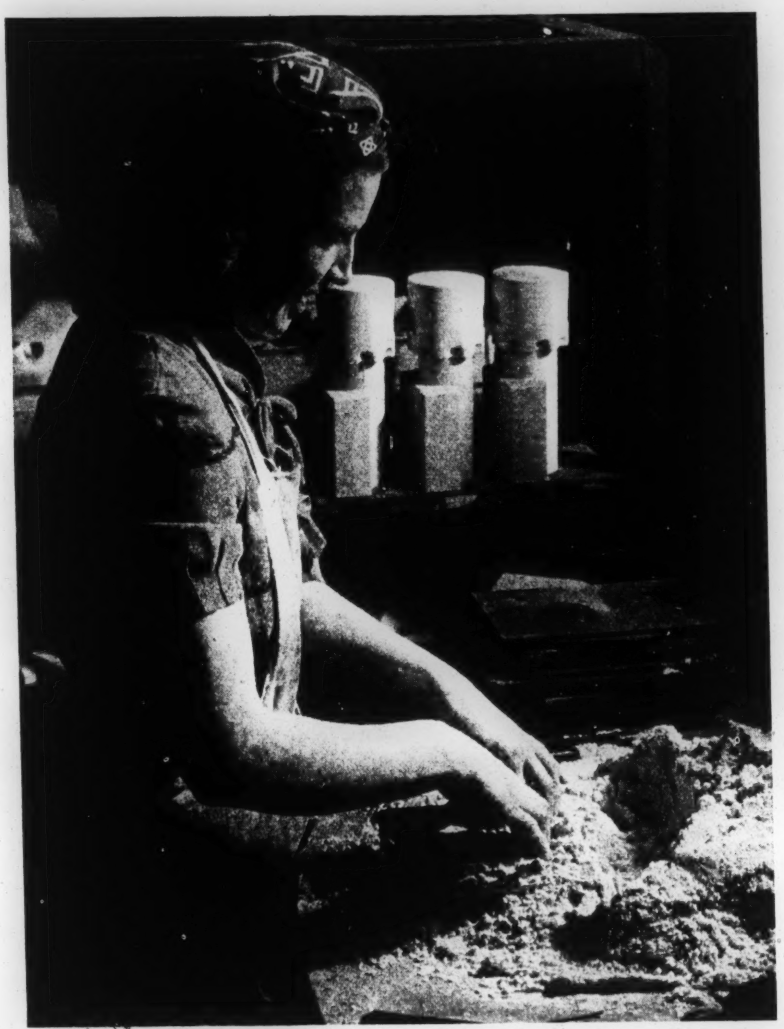
In 1939 there were 36 women employed in American shipyards.

Two years ago when I saw women working on destroyers and submarines and in the machine shops at the Mare Island Navy Yard and on tankers and other ships around San Francisco Bay, I was told that there were



At the Touch of a Finger, This Monster Hydropress Molds Metal Liberator Parts

The inside underpart of the huge hydraulic press is hard rubber. As it comes slowly down, the rubber pad presses and shapes sheets of metal to the die at the bottom. The press is used only for mass production jobs and can stamp out several different small parts at once.



The Distaff Arts Are Not out of Place in the War Effort

Making sand cores, or molds, for magnesium castings is "easy as pie" for women used to kneading pastry dough at home. Fine, flourlike sand is painstakingly molded into precision forms, sprayed with oil, and baked. Pistonlike forms in background are finished molds of airplane parts.

jobs which women could never do—shipfitting, for instance, and chipping, and handling the big cranes.*

Kaiser put them on the big cranes, and now they handle them with ease, swinging giant steel arms out over yards to pick up whole bulkheads or afterpeaks and lift them to the ways. Shipfitting and chipping, along with dozens of other all-male jobs, they've taken in stride (page 204).

Thousands of women are doing such simple things as welding and riveting. About the only thing they do not do is heavy lifting. It is illegal in most States. But in many cases, even these operations have been broken down to permit women to handle them.

It took 175 tons of blueprint, 4,300,000 feet of welding, and 3,830,000 man-and-woman days to build the U.S.S. *Missouri.* Every Navy craft produced takes proportional figures. And enough preliminary and supplementary work to make you wonder if anything else is going on anywhere.

At the David Taylor Model Basin in Maryland, where the Navy experiments with new ship designs and tests scale models of both Army and Navy craft, I found Dr. Avis Borden working in the structural mechanics division developing methods of calibrating underwater explosion gages. She had received her degree in physics from the University of Michigan in 1938, but she had never had a chance to use it in such important work. Now her findings have been put to official use.

In another section women were taking readings on marine propellers in a variable-pressure water tunnel (page 203). In engineering and drafting rooms they were making drawings, calculating water and pressure effects, and performing intricate mathematical computations connected with naval architecture.

Out in the damp, cavernous chamber which holds the 963-foot-deep water basin, we boarded the big carriage which hauls ship models through the water channel at speeds from 18 to only 0.03 knots (page —). It looks like a small cantilever bridge moving through the air, but it is so delicately built that it can maintain any desired speed at a constant value within one-hundredth of a knot while following the actual curvature of the earth. Two girls in blue jeans were driving it.

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* See, in the National Geographic Magazine, March, 1943, "San Francisco: Gibralter of the West Coast," by La Verne Bradley.

Results of runs for the 20-foot model of an aircraft carrier being tested were recorded on dynamometers and translated onto charts being plotted by other women at desks which ride with the carriage. These women aren't scientists. They are just average girls, trained swiftly to do vital jobs.

At a naval gun factory women at big profiling machines were turning out rotating pans for 16-inch guns. They were working light and heavy lathes, milling machines, drill presses, thread grinders: making sears, breech-blocks, and hundreds of other gun mechanisms. They were greasing giant gun barrels and painting others for battle.

A Beauty Operator Takes to Machines

Dressed in blue safety slacks and caps and stepping over huge guns lying about on the floor, or linking arms together to go to lunch, they looked more like Rockettes against a supercolossal stage set.

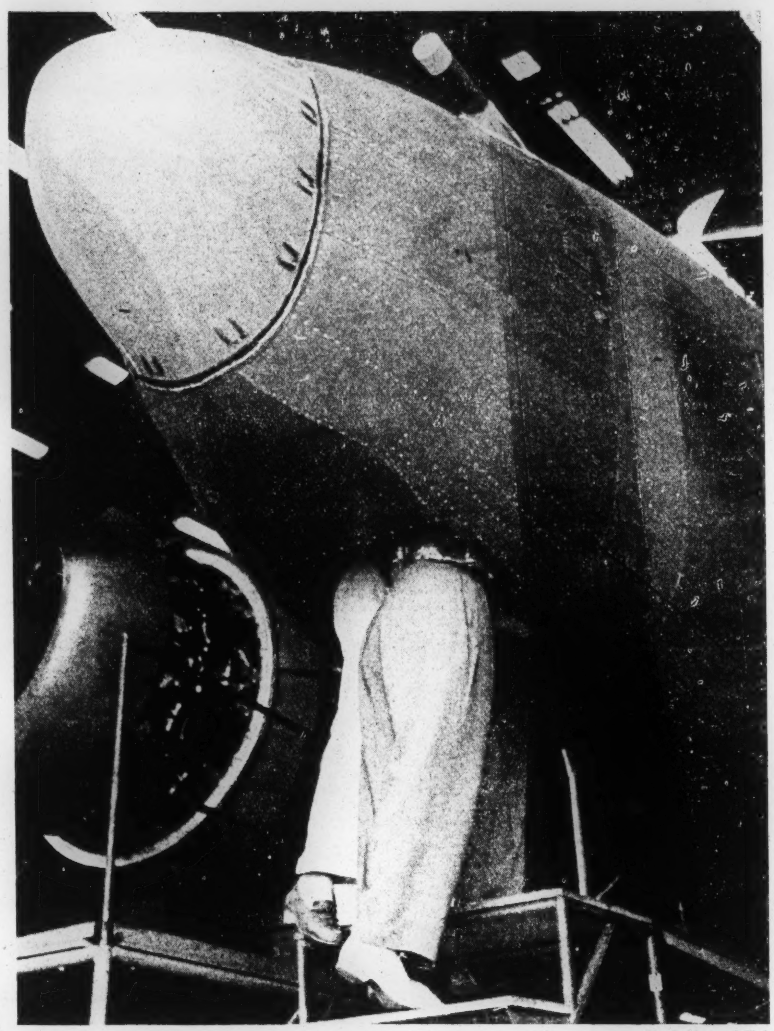
The shop supervisor, who has been with the big guns since 1912, had to be shown that slight girls, such as the former beauty operator on the Keller profiler, could handle these machines.

They are trained on the job here, and trained fast. One girl had two hours' instruction on a machine, went to work, and the next day in an emergency broke in another girl. There is little difference between an inexperienced woman and an inexperienced man in this work.

And there *are* some "natural" women mechanics. "Like Joan," said the supervisor, pointing to a girl working over a big hydraulic shaper, "who should have been a boy. Except that she's better than most of them." Joan was trimming a bore for a 6-inch antiaircraft gun to a tolerance of .001. She said she had always loved machines, but never had a chance to get her hands on anything like *this* before.

Women physicists and engineers in the Acoustics and Special Problems Division of the Naval Ordnance Laboratory at the Washington Navy Yard have come about as close as any women in history to going to sea with the Navy.

They've worked on ships tied at docks. They have also gone with officers and men on field



U. S. Navy, Official

Perhaps They Are Movie Extras Doing Their Bit on the Swing Shift

Here, girls in the Lockheed plant at Burbank, California, work in the bombardier's hatch of a Ventura. The bomb bay is farther back. This twin-engined bomber hunts subs, bombs ships and shore installations, and patrols vast ocean reaches for the Navy.

U. S. Navy, Official

No Time to Prink in the Mirrorlike Tail Assembly of a Liberator

About half the country's aircraft workers are women. Many jobs they do as well as men, some they do better (page —). Riveting—a kind of needle-point in metals—is one of women's standout operations.

assignments to Key West, New London, and Miami. They've knocked down many precedents, and their male co-workers have discovered an important thing—they get through red tape faster.

One yard officer almost let a girl go to sea to take recordings, but the ship's skipper wouldn't break precedent.

At Narragansett Bay two girls worked on the water front in a trailer laboratory, but for their offshore tests the Army had to take them to sea in Coast Artillery boats. At the Key West Sound School, Navy men would go out by day to make sea tests, and the girl physicist they took down from the Washington research group would wait and work with them over analyses at the base by night.

Women in High Explosives

When they first reported to different naval stations for scientific research, listed, the way the Navy does, as A. Axon or G. Irish, women were usually met with astonishment. It was a crisis of accommodations unless there were WAVES * aboard. At one base A. Axon finally agreed to iron an officer's shirts if he would wash hers in the all-male laundry room.

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* See "Women in Uniform," by La Verne Bradley in the NATIONAL GEOGRAPHIC MAGAZINE, October, 1943.

Women working in high explosives is not new, but it is still an electrifying thing to watch. At the Bellevue Naval Magazine, a healthy distance downriver from the Navy Yard, we found women in steel-barricaded rooms measuring and loading pom-pom mix, lead azide, TNT, tetryl, and fulminate of mercury.

Most of them were colored. They seemed delightfully blasé as they passed the stuff along. Some would wink or give a big grin as we poked in their booths. But they treat powder with respect. They know by training that any snip of it could blow them to flinders.

I asked the officer if their temperament—their lack of nerves, say—had anything to do with their being here in such numbers.

"No," he said, "they like that extra six cents an hour hazard pay. This is one of the few jobs in industry which has a waiting list of applications."

Different loading operations were strung along different weirdly grouped assembly lines. On one line they would be loading tetryl lead-ins for bomb fuses, or delay elements containing small cells of black powder, or mercury fulminate and lead azide for detonators.

In small steel booths others would receive an element through a hole in the wall, put in the measured milligrams of powder, and pass it quietly through an opposite hole to the next booth for another cautious twist, or tap, or turn.

The workers are frisked every morning for matches. During smoking periods they walk way off from danger areas to where electric cigarette lighters are provided in safety zones.

The *Iowa* and women were launched the same day at the Brooklyn Navy Yard, when the first 19 came in as "mechanic learners." There are several thousand now, and many are rated machine operators, skilled welders, shipfitters, and supervisors.

One of the first 19 heads them all today. She took us through mold loft, fabricating sections, and shipfitting departments with the air of an old hand.

"It's really simple to build a ship," she explained. "You get your plan, cut out your pattern, prefabricate it, fit it together, and launch it. Men have always made such a job of it!"

She knew what each yellow streak on the big steel sheets indicated, where they would go, how they should be fitted. She explained air hammers, calking tools, and electrodes; how they burned out holes for pipes, cables, hatches; how they chipped off excess stock from steel plates; welded seams; flushed rivets.

Beginning in the mold loft, she had climbed around on hands and knees, working over blueprints, laying out templates, tracing patterns along body plans on the floor; then on through riveting, welding, shipfitting.

They used mostly college girls in the mold loft at first, until they found that almost any average girl has aptitude for pattern making. They're all over the place now, bending over plotting tables, crawling over loft decks, moving about in similar clothes like blue beetles.

In the great shipfitting department, we walked in a world of giants. Everything was big—noise, and space, and parts of ships.

Blue oxygen flashes would light up remote corners to outline human figures bent like small parentheses around huge steel plates; or golden sparks would suddenly sheer out from a chipper's gun; or sprays of silvery molten metal would touch off another dark section until you could feel the very depth and height of it.

Stooped over acetylene torches or hidden behind steel helmets visored to protect them from the intense light of arcs, women in bulky leather pants and jackets labored feverishly over welds and seams.

A Variety of Army Jobs

Women are doing men's jobs for the Army, too.

For the Air Forces they teach cadets to fly, dispatch bombers and fighters at busy air bases, repair planes, and do sheet-metal work.

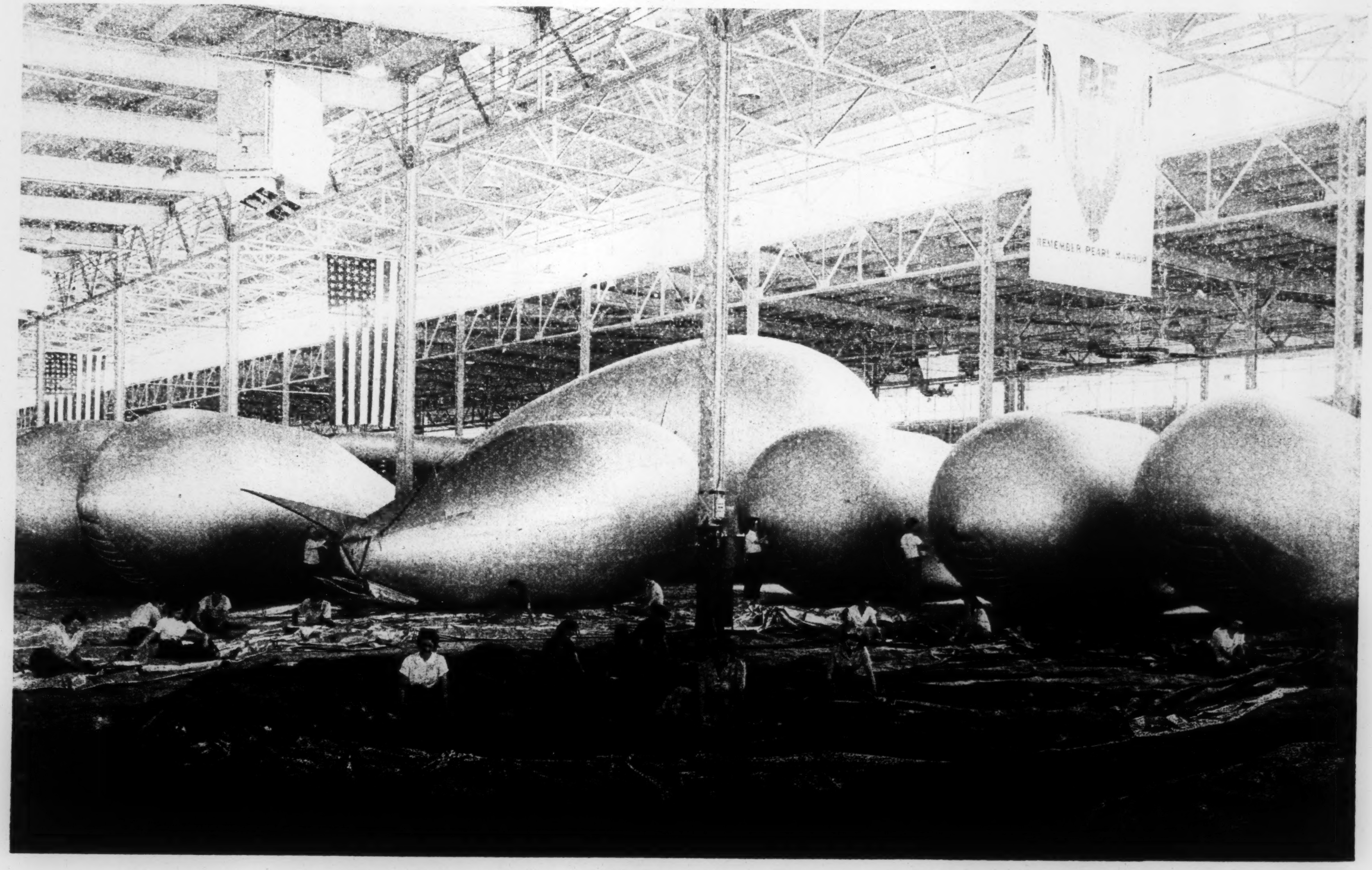
For the Army Service Forces, which alone employs more civilian industrial labor than any economic empire in the country, they manufacture explosives, load bombs, test parachutes, inspect war plants, and handle giant tooling machines, cranes, tractors, furnaces, compressors.

They mend shoes and tanks. They drive convoy trucks for the Signal Corps and locomotives for the Ordnance Department; they make uniforms for the Quartermaster Corps, and count fish for the Army Engineers.

They are laborers, machinists, electricians, tinsmiths, pipe fitters, architects, chemists, surveyors, attorneys.

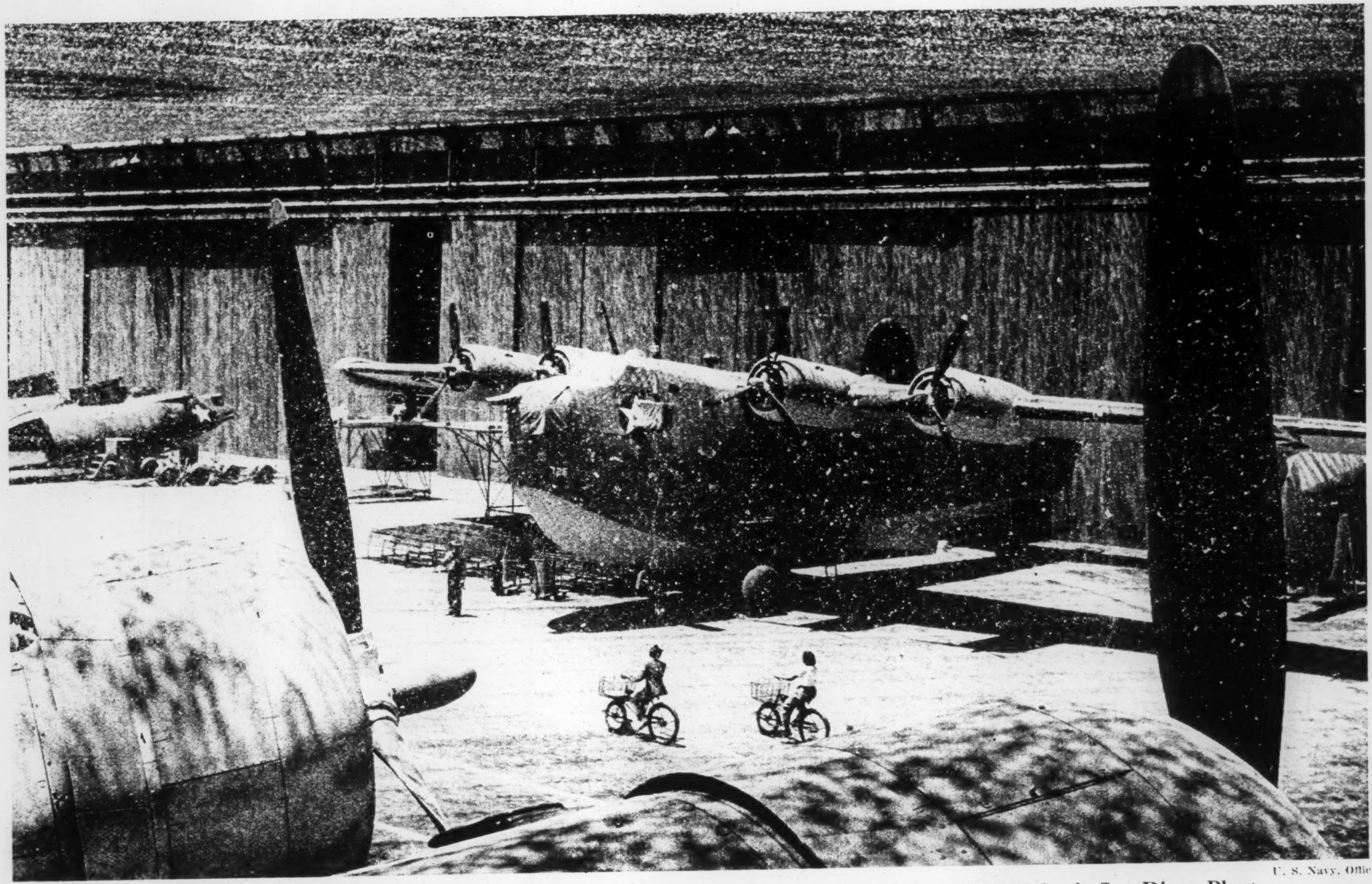
As the Army Engineers moved into combat work, thousands of women poured in to help with the jobs left behind—river and harbor work, navigation and flood control, surveying, designing, building—jobs formerly done only by Army engineers or their civilian male assistants. Today 29 percent of the 84,000 civilians behind the Army Engineers are women.

They have measured the depth of the Columbia River for charting and dredging; they operate radios to Mississippi River boats.



Soon These Barrage Balloons Will Float Above Convoys to Foil Enemy Air Attack

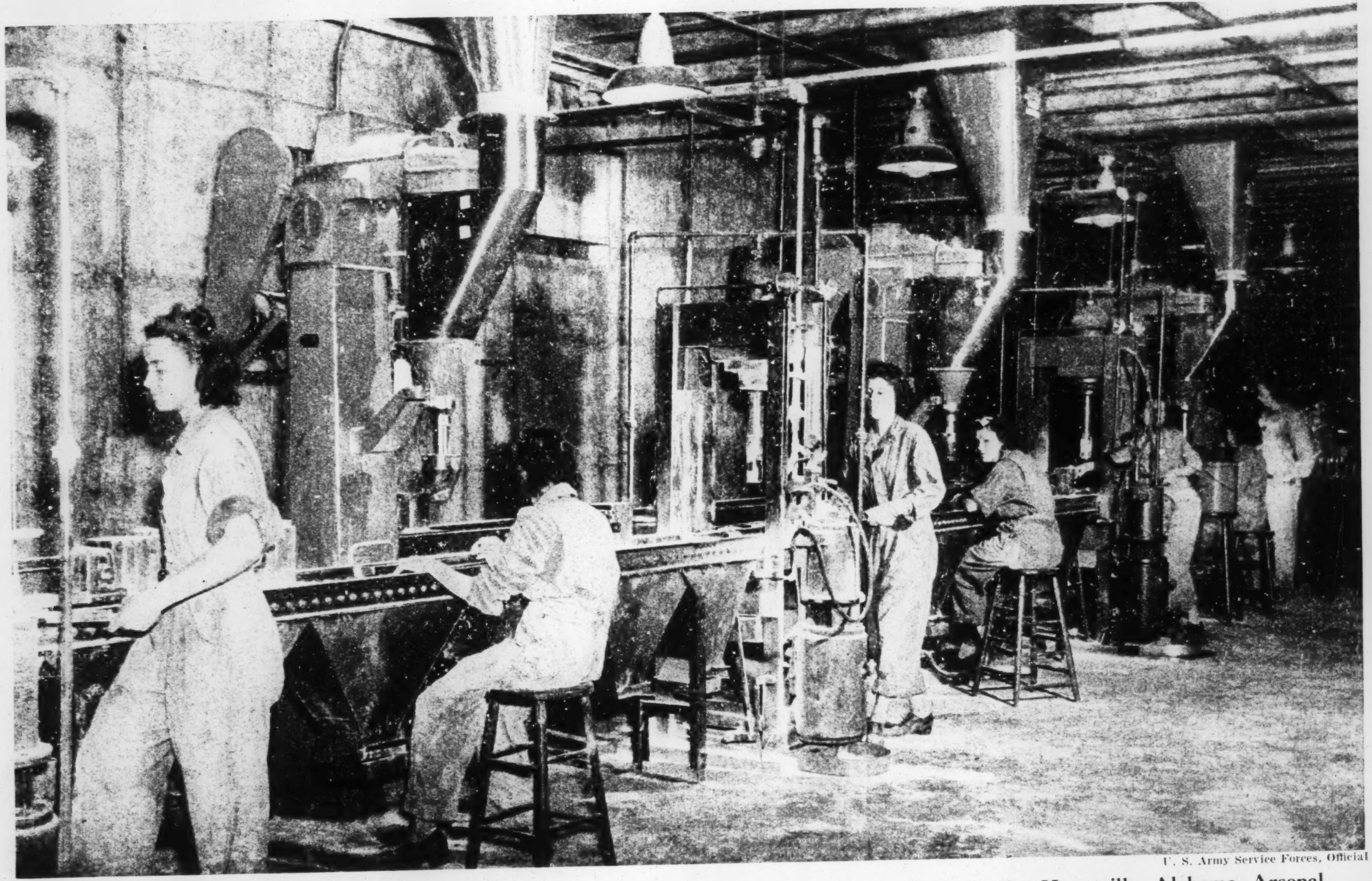
The new type shipdeck barrage balloon is effective against dive bombers, yet a small crew can operate them. Here, girls on the floor are cementing seams and checking for blisters. The six small bags are being test-inflated for leaks, as is the larger one in the background. These balloons can be flown with or without tails, depending upon the flight action desired. They give air protection for ships, beachheads, factories, and cities.



U. S. Navy, Official

War Birds Flock Together Under a Chicken-feather Camouflage Net at Consolidated-Vultee's San Diego Plant

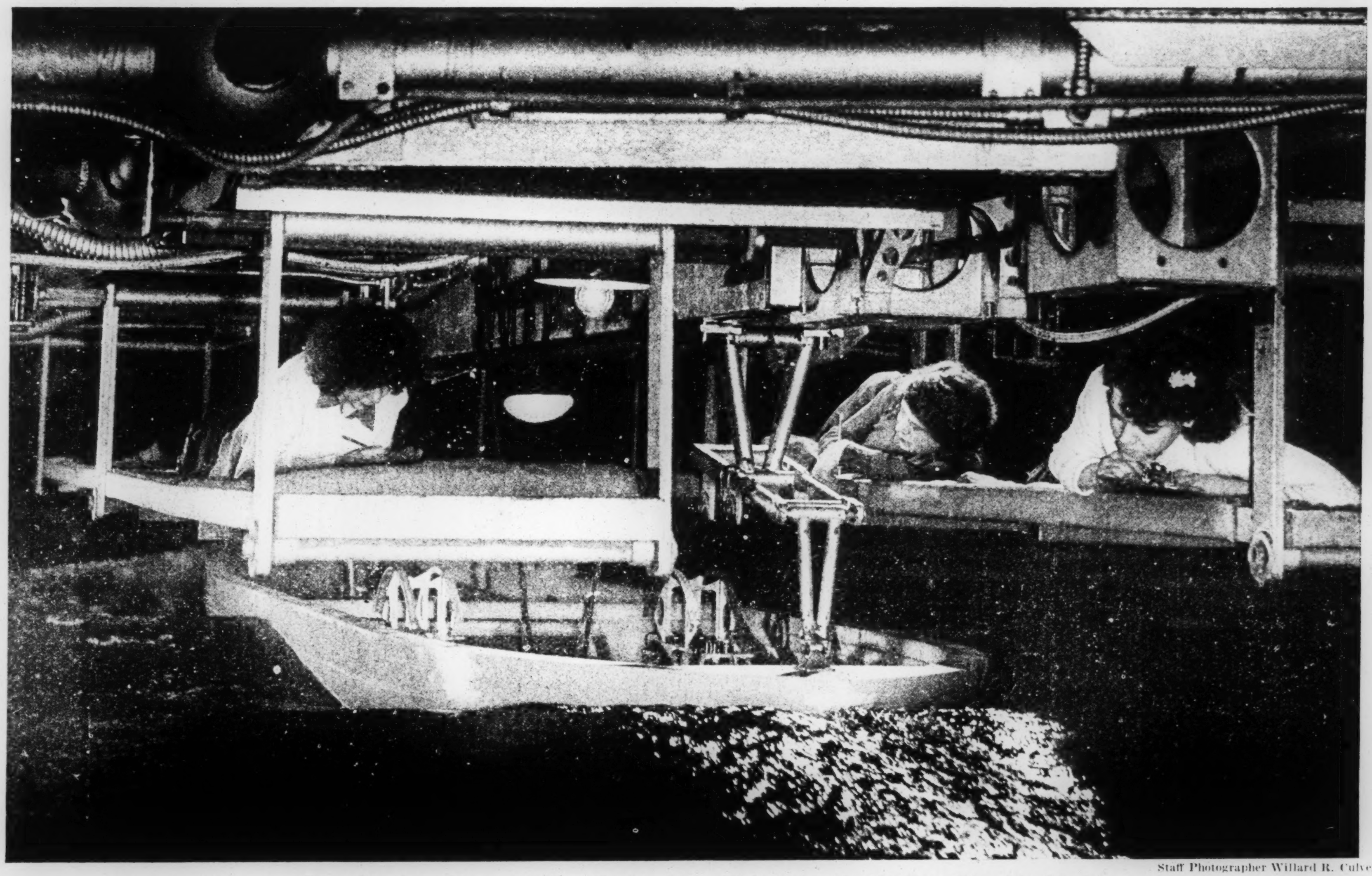
Girl messengers bicycle through the huge plant. The 33-ton Coronado patrol bomber will soon make trans-oceanic flights for the Navy. Speckled effect is from the camouflage net overhead. Varicolored feathers disguise the plant, making it look like the countryside, with houses and roads.



U. S. Army Service Forces, Official

Southern Belles Man an Assembly Line Turning out Smoke Screen Powder for Artillery Shells—Huntsville, Alabama, Arsenal

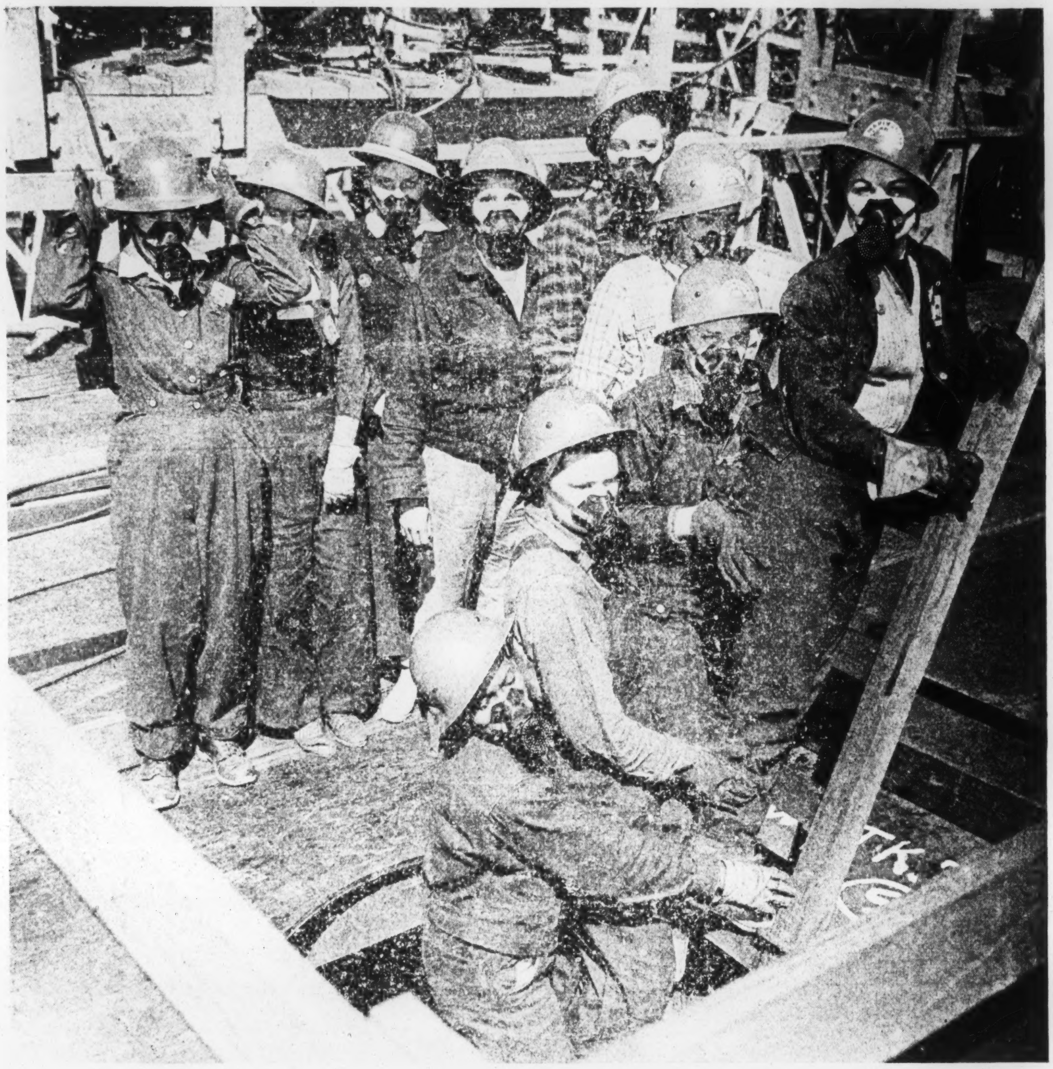
Barrages of these shells hide tank movements and landing operations from the enemy. When the shells explode, moisture in the air turns the chemical into billowing smoke.



Staff Photographer Willard R. Culver

Boys Used to Play with Toy Boats: Now Girls Scientifically Test Warship Models

Here, a miniature Maritime Commission tanker runs through the 963-foot-long David Taylor Model Basin, near the nation's capital, as girls jot down readings from automatic recorders. The picture, taken from a boat towed behind the testing carriage, shows the stern of the model. Efficient, fast hulls of the Navy's newest battleships were designed from scale models tested in this basin at Carderock, Maryland. Seen in a dry dock, bows of modern ships are hour glass shaped—bulbous at the bottom, fine or sharp at the water line, and flared out above.



U. S. Maritime Commission, Official

For Women Scalers, Tin Hats, Respirators, and Coveralls Are Stylish

Here scalers go below decks to scrape rust from the interior plates of a Liberty Ship at Sausalito, California. Respirators are needed to cleanse the dust-laden air before it is inhaled. In 1939, only 36 women were employed in American shipyards; today, 103,226.

They work with the Army in the field computing soil erosion, levee seepage, silting; charting evaporation rates and wave action on breakwaters.

They have followed the Engineers almost everywhere except overseas. One girl has driven an Army truck for three years through all kinds of weather to run mail to them in Alaska.

Dr. Mary Engle Pennington, the Quartermaster General's consultant on food handling, has ridden in the caboose of refrigerator trains, in the bottom hold of cargo vessels, and waded knee-deep in eggshells studying improved ways to get food to the Army.

Women of the Transportation Corps handle more than 200 types of Army vehicles at the gigantic shipping pools at ports of embarkation. They check them mechanically, wash and drain them, pack parts in grease, tape and shellac others against sea spray. And they get the ships in shape to carry them. They weld, clean, paint, carpenter, plumb, and check electric systems.

They help move freight from trains to ships, run trucks down dark narrow passages of warehouses and piers, operate fork lifts to stack and unstack tons of equipment, manipulate big cranes to place tanks and guns in loading position.

Russel C. Aikins

Pinch-hitting for a Man, a California Miss Shovels Sand in a Foundry

Sand, she and the men are shifting, will mold the stern post for a merchant ship in a Pittsburg, California, steel foundry.

On a siding at the Aberdeen Proving Ground in Maryland, we found captured German tanks were lined up with other equipment returned from the front for testing. Yellow turrets and hulls were spattered with names, dates, messages from the boys who reached them first—"Cpl. J. Hanson—Naples—November 2, 1943." Then scrawled across a gun mount—"Why the hell don't you boys come over and pick up your own equipment?"

Aberdeen is the world's largest proving ground. All the fighting tools of the Army, and some for the Navy, are put to test here—bombs, shells, guns, bullets, trucks, tanks, even paints and lubricants.

There is a feel of war about it so thick it penetrates. If you forget it for a minute, a giant gun will boom in the distance, windows will rattle and buildings shake, and you'll feel it through the soles of your shoes. And flares will drop over in the next field from test planes whining high overhead.

A Mirror of Invasion

Equipment is lined up in such massive quantities you begin to think the invasion must be starting from this side of the Chesapeake. Which it is.

It's like looking at mirrors in mirrors. Trucks and searchlights, emplacement guns, mobile guns, artillery and antiaircraft guns are telescoped down lines and over ridges as if

Even Grandma Finds Work Suitable to Her Strength and Skill

Here she oils the engines that drive a Cleveland, Ohio, blooming mill—that part of a steel mill where red-hot ingots are rolled into shape (page —). Larger wheels than these—also kept spinning by women—power blast furnaces.

they had come out of the ground that way and were ready for harvest. Guns which rake the sky in front of you look like matchsticks at the far end of the line.

Do you know what a 16-inch gun sounds like? Or a 12-inch? Or even a 9-inch? Have you ever had it lift you up on your toes, and smash like a physical blow against your eardrums, and bring all your bones together until they scraped? Women work with these guns on the firing line!

And they fire machine guns and carbines and pistols, round after round, until the shells pile up like little brass mountains (pages 207, 208).

They work with mufflers and heavy mittens in winter, and sweat under the heat of sun and hot metal in summer. They are great brawny women bulging out of tight overalls and youngsters from high school wearing the famous red and white bandannas which mark them as wows.

One carbine tester is a grandmother. I tried the gun she handled so easily, and an officer had to back up against my shoulder so it wouldn't knock me down. A girl from North Carolina who used to drop squirrels from her front porch is testing tank guns.

We took a jeep over the "world's worst road," built that way for proving mobile equipment. There were mud traps and sand traps, 60° grades and 40° curves, tropical roads and alpine roads, and concrete roads with 6-inch washboard waves.

Aberdeen is called the brains of the Army because Ordnance research deals with some of the finest phases of science and mathematics, and because it proves them all.

In the Aberdeen ballistics laboratory we found scientists from universities and observatories all over America carrying on research in the art of gunfire. Dr. Edwin P. Hubble of Mount Wilson Observatory, whose photography made possible the mapping of 10,000 new universes, is here, among others.

J. Baylor Roberts

One Can Almost Feel the Heat and Hear the Bark of This Aircraft Gun Test

The girl pulls the rope trigger and stands away while a 20-mm. machine gun is given a breakdown test at Aberdeen (Maryland) Proving Ground. Composition wall blocks are sound-absorbent and fire-resistant. Girl fires until gun breaks down.

"Astronomy is a twin science to ballistics," said Dr. Hubble. "There is peculiar affinity between the motion of heavenly bodies and the less heavenly path of projectiles. Knowledge of one is directly applicable to the other."

A large percentage of the staff is made up of girl astronomers, physicists, and mathematicians, who work in darkrooms, chemical laboratories, and firing rooms. They photograph the actual trajectory of bullets, compute tables of velocity, work over high-speed radiographic equipment, and analyze performances of both Allied and captured ammunition.

This is no routine testing. One gun may have a book of 86 pages, plus charts. An army couldn't function without it.

In one laboratory a girl was working over spinning shells suspended from balanced mechanisms of some sort.

"Measuring moments of inertia among other things," she explained, and showed the difference between a shell which might ride nose high or drop nose heavy and one which would go where it's supposed to go.

Music Amid the Noise

They said women's nerves couldn't stand the noise of the big guns, that their frames wouldn't take it. Women ordnance workers can stand anything.

In the shop at the Frankford Arsenal where casings for gun shells are made, the industrial crescendo of all America seemed to me to reach its peak. It was a different kind of noise from the big guns, but equally shattering. It was steady and penetrating and mixed—the thunder of giant stamping machines, the pounding of drop hammers, the whish of boiling water, and the ringing of bumping metal, all run together like the big, noisy climax of "Götterdämmerung."

"We have music, too," said the major. I couldn't hear it, though passing workers seemed to be whistling to something. After

J. Baylor Roberts

These 90-mm. Shell Assemblers Put the "Power" in Womanpower!

These Aberdeen (Maryland) Proving Ground workers have an average weight of 227 pounds. The shells they make are for test purposes. All the fighting tools of the Army are thoroughly tested at Aberdeen (page —).

picking noises apart, like going through apples, I finally made out the faint strain of a march, and then I noticed an amazing thing. Hands threw levers, loaded conveyors, and whipped from shell to shell in rhythm. It was fantastic.

Women work faster on these jobs than on any I saw anywhere in any industry. It happens to be that kind of work. Mountains of flat brass disks would dissolve as they were grabbed and rolled under stamps and came out smaller disks; then under another press which stretched them to shell cases, and on through 25 operations in a matter of split seconds.

At the 40-mm. tapering operation, which gives shell cases that indented curve, long belts fed a continuous chain of straight brass cylinders to the big press. Women would snatch them from the belt and slip them under the hammer, then grab them off and set them in moving conveyor cups, all in a single pendulum motion.

Hundreds of women were doing the same thing for different-sized shell cases on different-sized machines. Thousands of hands and fingers seemed to be in constant motion back and forth, as stamping machines moved ceaselessly up and down, up and down. Soapy steam from scalding tubs filled the air with an eerie mist.

It seemed like pretty rough, hurried work for stuff that should be so infinitely accurate. They told me that a woman worker with a son in the Army had come to them recently with the same question. She had a shell case in her hand that had gotten dented somehow. They took her carefully through each department, past correcting machines, testing gages, and final inspections until she could return to her job with confidence.

Men said there were jobs that our women wouldn't do—hot, heavy, unglamorous jobs in steel mills and oil refineries and on railroads. They are in all of them today.

We saw women laying out sheet metal in a broiling summer sun, perspiration rolling down the dirty collars of their shirts. We watched them heaving sand on railroad tracks in temperatures below zero.

We sickened to the smells of chemical laboratories filled with women preparing medicines, anesthetics, explosives; and I came away wondering how they could stand hour after hour under the screaming, thundering noise of assembly lines.

Hundreds of thousands of war-working

International News

To This War Mother, Firing a Boiler Is "Easy and Not Tiring"

Members of the "weaker sex" usually take war jobs because they have a man—son, husband, or sweetheart—in the service. This stoker in Hyde Park, Massachusetts, kept her hard work a secret from her husband, also a war worker. Her son is in the Navy.

women have taken their families to new homes thrown up feverishly near aircraft plants, shipyards, arsenals, mills, and mines. Nurseries have had to be built to care for their children.

Employers have added work incentives and securities of ingenious description—counselors, nurses, gymnasiums, clubs, uniforms, rest periods, hot food, music. Some factories have become worlds of their own with "night finals" published by the plant for every shift.

This isn't always the case, of course, even in war. The sister of a famous author, working for a big company in New England, said, "It's still a long run on a cold day to the women's annex, tacked onto an all-male plant."

Flagpole Painters and Junk Sorters

In Kansas City a woman paints flagpoles. New Orleans has a couple of women trash collectors; Lawrence, Massachusetts, three junk sorters. And an appeal has been made to the women of Chicago "weighing more than 200 pounds who enjoy outdoor work and have no particular objection to the aroma of garbage."

Women in slaughterhouses are brain pickers, belly graders, stomach scrubbers, sweetbread pullers, and vein pumpers. They also have a spice girl.

You've seen women cabbies, bus drivers, trolley motormen, and messengers. You've landed at airports and watched them load baggage, call flights, control traffic. In Denver a girl in the glass tower sometimes directs a plane a minute on the runways while monitoring four radio circuits, a battery of telephones, and the public-address system.

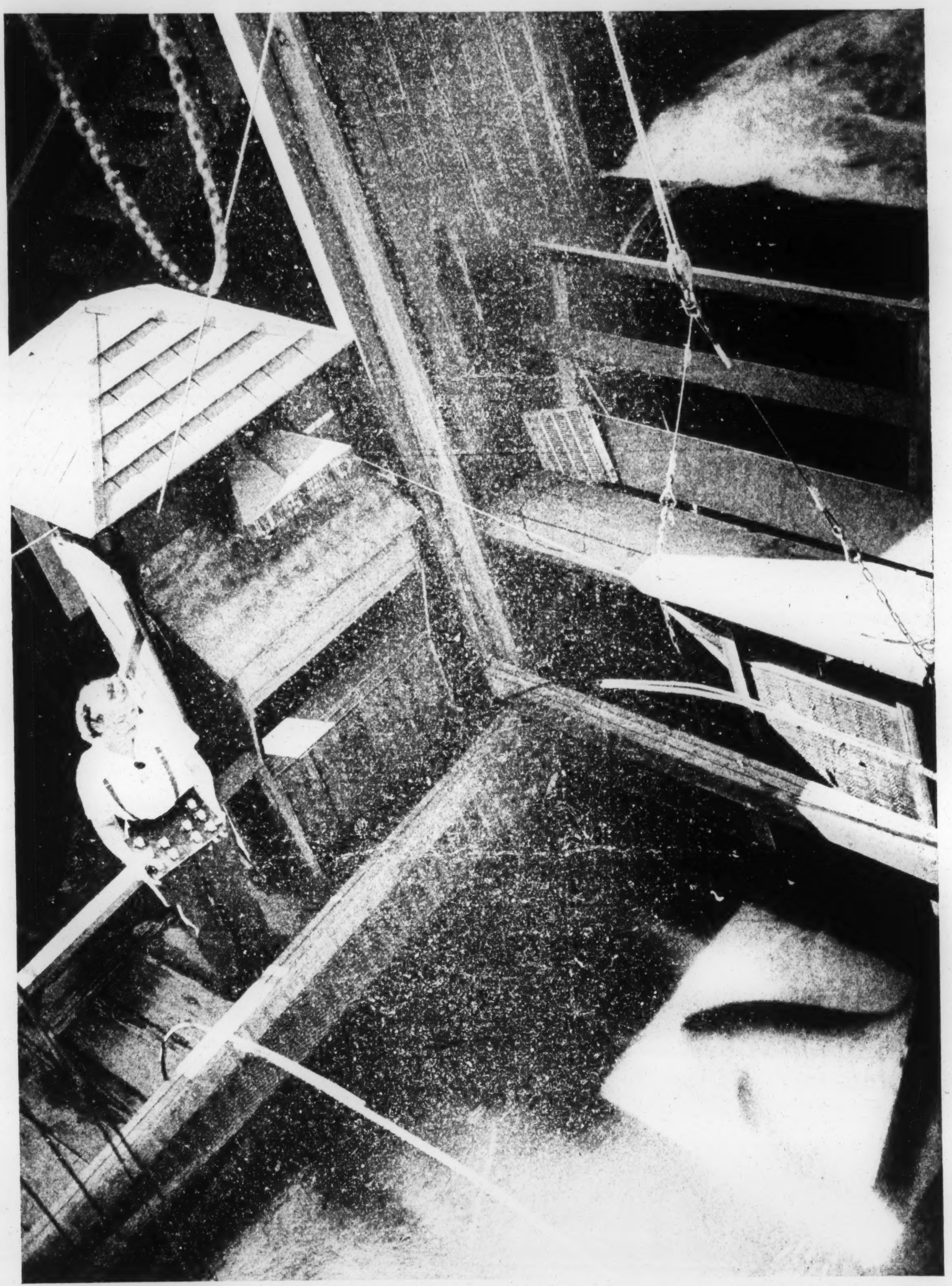
They are also milkmen, postmen, firemen, street cleaners, and traffic cops. Ten policewomen patrol the Boston Common and sections of that city's entertainment areas.

Thousands of newly trained women are keeping telephone lines open, working through the night, making quick decisions which may affect the heart of a home or a big war contract. It takes 12,000 calls to build one bomber, 87,000 to build a submarine.

Scientific and Technical Workers

These aren't the glamour jobs—but they're collateral to victory. There is still a bus parked on a downtown street in San Diego with the grim sign: "Just one of many—idle for lack of drivers." And people crowd and struggle to reach the busy Navy docks and aircraft factories.

Into war plants and research laboratories



U. S. Army Corps of Engineers, Official

Girl Census Taker Tallies Two Salmon as They Swim through the Bonneville Dam Fishway

The white deck silhouettes the fish as they reach the top rung of the fishladder around the dam. Successive pools, each higher than the last, form a water stairway for Columbia River salmon on their spawning runs upstream. As many as 100,000 fish a day are counted. The girl can identify 25 species.

Watervliet Arsenal, Official

Girls Repair a Scout Car—One of the Many Necessary but Unglamorous War Jobs

At the Watervliet Arsenal, near Troy, New York, one mechanic has spread a tarpaulin over the fender to protect it from grease. Most arsenals come under the jurisdiction of the Ordnance Department, which developed the jeep before it was turned over to the Transportation Corps.

have poured women geologists, physicists, meteorologists; aeronautical, radio, and electrical engineers. Women scientists are studying and experimenting with the headline materials of the age—cures for strange diseases, synthetic rubber, experimental lubricants, radar. Many are actively famous; others have brought their talents and learning out of retirement to apply them to war research.

At the University of Rochester, Dr. Frieda Robscheit-Robbins, who assisted in the research which led to the Nobel prize-winning discovery of treatment for pernicious anemia, has dropped her peacetime studies to work on a substitute for blood plasma.

Women chemists, swathed in gauze masks, run tests in plastics and resins in the laboratories of the vast Monsanto Chemical empire. They have entered a no woman's land here in one of the biggest chemical companies in the world. The Hercules Powder Company has women Ph.D.'s experimenting with explosives.

At the Mellon Institute of Industrial Research, in Pittsburgh, the staff of women chemists has jumped 500 percent since 1941. The first woman to receive an engineering degree from Carnegie Tech is metallographist for Westinghouse Electric Manufacturing Company. Another Westinghouse engineer is a girl of 26 who is working in electronics research. She read her first paper last year before the American Institute of Electrical Engineers—"Skin Effect in Bimetallic Conductors."

Westinghouse is a conspicuous case of the need for skilled technicians, particularly in the field of radio and electricity, which has lost thousands of men to the Army Signal Corps. It is training dozens of women electrical engineers at Carnegie Tech.

RCA has sponsored 70 women engineering aides through Purdue to supplement its staff of graduate women radio engineers already working in vital international communications. Aircraft plants, shipyards, tooling industries—they've all set up schools for training women to replace skilled men.

In less than four years the Government alone has trained more than 2,000,000 women for war jobs. Working within industry, in schools, and on farms, it has taught them to

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Westinghouse Electric and Manufacturing Company

Mrs. H. J. Webb, B.S.E.E., Exemplifies America's Growing Group of Women Technicians

Only 26 years old, she helped write a paper on electric power transmission and is now doing vital research on war-needed electronic tubes. Here she works out a problem at Westinghouse's Pittsburgh, Pennsylvania, laboratories. Electricity has been her hobby since she became a "ham" radio operator at 15. Her husband is also an electrical engineer.

build, design, analyze, plow. At the 200 colleges operating under the War Training program, 202,528 women have been trained for technical or professional jobs in war industries.

Now, More Women Needed

In the two-year period ending in December, 1943, the Army trained almost 500,000 civilian women for jobs with the industrial, maintenance, service and supply units of the fighting forces.

At war's end, the country will emerge with a vast pool of skilled, semiskilled, and professional women.

But this is the year of invasion!

Five million more women have gone to work since 1940. Almost 11,000,000 men are now in uniform and the number is increasing every month. By the end of 1944, industry and civil life will need nearly a million more working men and women, which means women, *apart* from the 3.4 million needed in agriculture during the berry-picking, corn-husking, harvesting seasons!

War production is scheduled to reach its peak this year. Cutbacks in ammunition, small arms, antiaircraft guns, and tanks will be offset by such top-urgency articles as landing craft, trucks, radar, and communications equipment.*

Aircraft production may soar another 50 percent. The big B-29's have gone into mass production. Plane output reached more than 9100 in one recent month. But it took 1,000 people working 48 hours a week for a year to replace the bombers lost at Schweinfurt! And one Army division used up all its guns in one month in Italy!

In some areas they've launched a home-to-home canvass to tap the remaining available housewives of the country.

An Industry of "Spaces and Structures"

In the roaring infernos of the country's steel mills, I found hundreds of housewives, even mothers and grandmothers.

Steel is big. It's powerful. It's exacting. If you made cake the way they make steel, you'd count the grains. And you'd make it in a huge hall. You'd make it with ovens open and flames roaring and you'd have to stay right by it to test it every three seconds.

The steel industry is a thing of great spaces and structures; heat, and brilliant flashes of light, and noise. You get the impression of much plant, much equipment, few people. There is no look of an assembly line. Jobs are studied and have a place way off in this corner or that. Then they meet and mix and you have steel.

There was a man in the giant crane overhead. Another walking toward the furnace to help direct the crane ladle. A few others here or there watching.

"Do women handle those cranes?"

"They handle some like them, but not those. Watch it."

The big ladle of molten iron was swinging toward the mouth of an open-hearth for pouring. "Women don't pour molten metal. Most of those men have been steelworkers all their lives. They are older, and highly skilled. It takes years of training and experience."

Below him a small cluster of people were working rebuilding a furnace. Women? We couldn't tell. We couldn't tell at six feet. They dress like men, and hair is pushed under caps; and like shipyard welders, clothes give no shape. "They're women," said the foreman. "They do most of that work now."

The women were dragging out the old burned-up bricks from the insides of the furnaces. Each of these interiors has to be torn down and rebuilt periodically. These women handled fire, bricks, and mixing mortar, and masons' tools, and it was dirty work.

Near the thundering blast furnaces women were preparing the sand-lined runners which deliver the molten iron to ladles. In the adjacent building they were oiling the giant compressors, and the Gargantuan wheels spun between ceiling and floor and made them look like dolls.

In laboratories they were making chemical analyses and metallurgical tests, and out in the mill they were reading temperatures and testing samples of hot metal. Everywhere they were working with steel—mixing, testing, manipulating controls. They seemed ridiculously dwarfed by the size of the equipment and the work.

Split-second Control

We found a handsome, middle-aged woman in one of the control pulpits perched up over the big soaking pits. Pulpits are the small booths filled with levers, which control the movements of giant mill machinery. She had a cigarette in one hand and was using the other to shove a lever.

"Watch," said someone, pointing down below to the hot pits. As she moved a lever, a big pit cover would slide back and giant tongs would swing in to drop a big steel ingot into the pit for heating or would remove it red-hot for rolling. By signals, she worked in split-second coordination with the craneman handling the ingots. These are giant things. They weigh tons. When they go swinging through the air, blazing-hot like this, they are terrifying. They move with a rush of heat and a pained, quivering noise.

In the blooming mills they are raced over rollers in enormous hot chunks, and pummeled, and mashed, and pushed, and shoved on to be pummeled and mashed again. Walls come together with terrific force, and animals run up and down your spine as you imagine what it would be like to drop some small thing like a human in those works.

As a red-hot billet came off a line, it was raced toward new rollers and slides controlled by the hands of another woman.

This one had to catch the hot block as it landed on a steel brace almost at her feet. Throwing a lever at the exact moment of contact would send it along a new roller on a 90° path to her right.

One after another the blazing blocks of steel would hurtle toward us.

"How did you happen to take a job like this?" I asked, keeping one eye on those hot rectangles of horror.

"It was my husband's job. I knew the terms."

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* See "Landing Craft for Invasion," by Melville Bell Grosvenor, NATIONAL GEOGRAPHIC MAGAZINE, July, 1944.

CANCER
WOMEN'S FIELD ARMY
TRAINMAN

New York Sun, Vincent Lopez

This Train "Man" Wears a Hat Created by Bonwit Teller, Inc.

After 10 days' schooling, she became one of the first women to take over the duties of trainman, a grade below conductor. She collects tickets, opens and closes outside doors, and knows how to operate airbrakes.

"Had you ever done it before?"

"No." She laughed. "I had never worked at anything. Except at being a housewife."

"How do you like it?"

"I'd rather be a housewife. And the sooner the better!"

In strip mills steel is rolled into sheets like pie crust, and into special shapes. In the strip mill at the Republic Steel Corporation's plant in Cleveland, women were handling cranes to stack the big steel plates rolling off the line for ships. Women were crating one big shipment for Russia.

One woman in dirty, old coveralls sweeping the floor was a grandmother. Mrs. Varkony, from Hungary. For two years she cleaned a bank building. This was better.

Women Work on Every Bendix Item

Do you remember the Bendix Aviation Corporation advertisement that appeared not so long ago showing a huge bomber covered with tiny white stars, indicating the equipment manufactured by the company? We checked and found that women's hands had helped build every item marked—and thousands more.

At the Bendix Eclipse-Pioneer plants in New Jersey women were in the foundry, machine shop, assembly rooms, and research labs, working on everything from the casting of engine housings to the assembly of the tiniest gimmicks in precision flight instruments.

This was one of those fabulous places where women seemed to make up a cross section of the whole feminine war effort.

Any of these plants is a story in itself. It's a city in itself. It becomes almost the whole life for the people who work in it. It builds most of their friendships, influences their home life, makes their existence revolve around those hours spent at work.

A few, particularly among the "duration crowd," put in their time and then chuck the whole plant atmosphere when they leave, considering they've done their job, which they have. But this isn't the usual case.

Nearly every girl we talked to in these city-like factories reflected the influence of the shop surroundings. It's one of the reasons many of plants have developed new streamlined methods of securing and *hanging on* to labor.

Some plants play music between shifts, music during work; they have organized riding or ball clubs, even glee clubs. By departments and by shifts workers are brought together until usually there gets to be an old-school-tie urge to outperform and out produce the other team. And the types which get pooled into these groups are amazing. College graduates, salesgirls, society women, waitresses, beauticians, all finding a common bond in their daily tasks.

The Bendix foundries are the last word in modernized technique, with automatic air and temperature controls, together with a maze of conveyor systems to expedite handling of materials. On one side women were making cores much like mud pies—tapping, patting, shaping the soft white sand into precise forms which are then baked for magnesium and aluminum castings.

On the other side and in comparatively heavy clothes, women of all sizes were burring, cleaning, and snagging—which means finishing up the castings—working with saws, grinding wheels and files.

And all of this to the scream of band saws biting off chunks of excess metal and the clang of automatic vibrators jiggling the castings to rid them of sand; the rattle of tumblers bouncing around the small metal chills to knock off bits of scrap and the roar of a dozen or so oil-burning crucibles melting ingots of metal.

Up on the balcony three women, one *per shift,* work around the clock, continually checking the automatic recording and control instruments which operate the giant ovens. The heat control of every casting is timed to a minute—much like a recipe—apply more heat, gradually reduce temperature, let set, and presto, it is finished.

Ethel, of the Machine Shop

We moved from one noise to another.

Ethel, in the machine shop, was about five feet tall and a former model. Operating a turret lathe, each time she would start a new operation she would rock up and down on her tiptoes to peek into the whirling part she was machining. Then she would release a lever, make another turret swing, peel off another thousandth of an inch, and rock again.

All the while she kept up a patter about her job and seemed to handle the mechanical animal in front of her much the way Frank Buck handles tigers.

I asked her how she happened to get into this work. She said, "Oh, I don't know. I guess I just like working with my hands—crocheting, operating a turret lathe—that sort of thing."

Girls in pink sweaters with bows in their hair were bent over grinding, gear-cutting, and burring machines. Milky fluids poured over the cutting parts to keep them cool, and big pans caught the grease and oil as it sprayed out from fast-moving parts. But the women stayed clean.

Women don't wear pink sweaters on all machine jobs. Mostly they are dressed to safety standards.

They have come to know the difference between jigs and fixtures, taps and drills, sprues and risers. They tell you they work on a "J & L" or a "W & S," and that means a kind of machine, and *anybody* knows which kind.

In the experimental laboratories at Bendix women physicists and mechanical and electrical engineers were absorbed in research on innumerable types of aircraft instruments and other automatic controls.

Suction and pressure gauges, sextants, compasses, de-icer controls, air and hydraulic pumps—women belong in this type of work. They are whizzes at winding coils, putting tiny gears in place, twisting delicate wires, following intricate patterns.

I found a dancer assembling gyros for drift-meters, a waitress inspecting tiny parts for precision, a typist assembling wee pieces in an altimeter, and hundreds of others—housewives, beauticians, milliners, debutantes. Their small agile hands play rings around men in assembling tiny intricate mechanisms which make up most of the Bendix products built at this plant.

It takes six miles of wire for the electrical

Office of Defense Transportation, Official

As They Clean, They Sing, "Children, I've Got Heaven on My Mind"

This job is not new for women, but they now represent nearly half of all railroad coach cleaners. By January 1, 1944, railroads had lost 227,531 employees to the armed forces, yet total personnel increased by twice that number.

system of one Flying Fortress (page 164). Men used to install the wiring after the plane had been assembled. Now a sub-assembly system breaks the installation into 26 units, and women do 75 percent of the work.

Western Electric has 43,000 women turning out tank and artillery radios, gun directors, aircraft instruments, microphones, teletypes.

At the Government-built Sperry Gyroscope Co. plant out on Long Island, nearly 50 percent of the production workers on compasses, bombsights, gunsights, automatic pilots, klystrons, etc., are women. They could use 75 percent.

We wandered through one of the big assembly shops here, stopping every so often to watch women's fingers nimbly forming multicolored, spaghetti-like rolls of wire into compact designs on cabling boards, or fitting small condensers, relays, and terminal strips into neat little patterns. They didn't always know why things went one way instead of another, but they seldom made a mistake.

In the engineering division women calibrationists were working the bugs out of many of the famous Sperry navigation instruments. In some ways, they are better than men at this. They have more patience and are more critical of imperfection. One of the girls was Rosebud Yellow Robe, the great-grandniece of Sitting Bull. She is a graduate musician.

Sperry has one of the greatest arrays of technical talent in America, and it uses women in every capacity. It has even opened its own engineering schools for them. They are skilled spectrometrists, microphotographers, metallographists, physicists. A 29-year-old woman doctor is the medical supervisor of their high-altitude laboratory.

In the engraving rooms of the Bausch & Lomb Optical Co., I watched women trace delicate lines over waxed lenses for gun sights to tolerances of plus or minus two microns. Precision sighting on another instrument calls for a tolerance of within one micron—39 millionths of an inch!

CHESAPEAKE & OHIO
ICX

International News

In a Chicago Freight Repair Yard, Women Pivot a Bad Boxcar Truck

A hard job even for men, they lift one end with a wheel stick and roll the other around it to the desired direction. The truck probably has "shelled" or worn treads and will be replaced. New or repaired trucks are on flatcar in background. Today 106,000 women are employed by railroads.

There is an aiming circle in production at Eastman Kodak Company which is used with gun batteries to pick up enemy positions; when the information is received, guns are aimed through what is known as a panoramic telescope.

These are highly refined operations and instruments must be flawless. Each gun in a field artillery battery has its own panoramic sight, with one aiming circle for each battery.

Quick Changes in Inventory

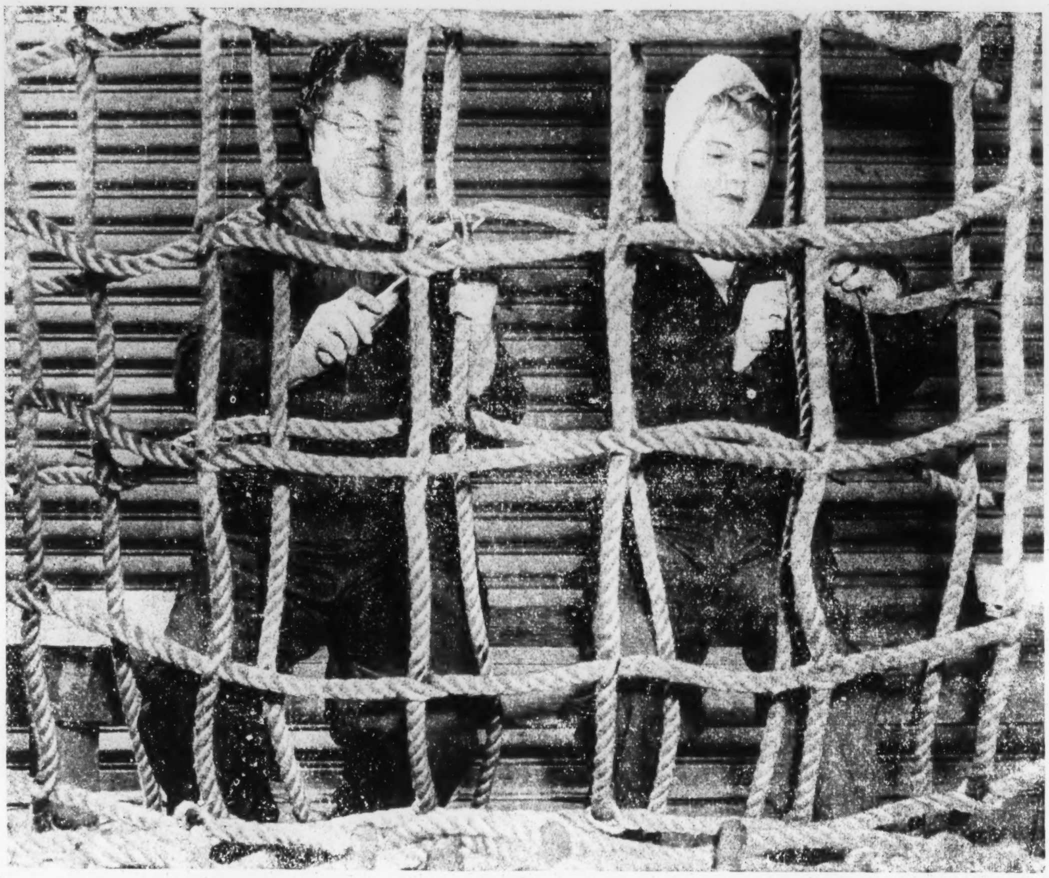
At long tables stacked with drab-painted instruments, women were removing minute dust particles by vacuum hose. This is the last touch before final inspection—after other women have built the housings, made the gears and tiny parts, cemented the lenses, aligned the sights, assembled the complete units.

And now the Government has women inspectors here to give each item a final check before it goes to the Army.

Eastman makes 31 types and models of optical instruments for fire-control, along with military and naval cameras, and such curiosities as steel pontoons used in the construction of bridges, wharves, and drydocks for the Navy. It is an interesting example of the strange changes in inventory which war has brought to thousands of manufacturers and of the quick adaptation of old talents to new jobs.

We took a trip through some of the dim, spectral spooling rooms just to get an idea of what women always have done in the way of repetitious jobs and under strange working conditions. This is where those millions of rolls of film are turned out that you see stacked up in big yellow blocks in drugstores and camera shops all over the world.

It was a weird sort of working life, made to feel subterranean by its windowless rooms and long, dark corridors. We felt our way through Stygian passages, pushing back heavy curtains



U. S. Army Signal Corps, Official

Down These Debarkation Nets Soldiers Will Swarm on D-Day

At Fort Mason, California, a former power machine operator and a saleslady put the finishing touches on the mass ladders which are hung over the sides of transports during landing operations. They resemble the cargo nets the Navy has used for years and the "save-all" nets which were spread between sailing ships and piers to catch falling cargo.

and hearing voices all down the line calling, "Watch out—*watch out*—watch out!" A peculiar hum grew into a chattering roar as we seemed to get near the machines.

"See those women over there? The green light means they are rolling panchromatic film. Red, in the next room, means Verichrome."

"Over *where?* *What* green light?"

Then I began to make out rows and rows of women like ships coming out of mist, in white smocks and dustcaps, swinging their hands back and forth over machines, setting in spools, throwing a gear, taking them out.

I moved up close and watched them in fascination. Spool in, whir, spool out. What do they think about? What do they do after work?

The point is that they can do it—and millions of women can do it. If they couldn't, there wouldn't be enough rolls of film or bomb sights or aiming circles—or any of the other hundreds of thousands of things which take monotonous application to a single routine operation.

Women Take to Tall Trees

In the big lumber camps of the Northwest women in high boots and checkered shirts have entered the big trees. This is a new world for women. The trade of the lumberjack was a hallowed one. Men of timber, like men of steel, are proud of their breed. Their jobs take strength. They live close to Nature, and they are a manly lot. Their women have rarely reached within earshot of the crash of trees.

A few were flunkies in camp cookhouses, and some worked in the mills tying bundles, checking, marking, cleaning up.

Today women are working by the side of the men of timber and in place of those who

Acme Newspictures

Lady Lumberjacks Direct Logs through the Mill Pond with Pike-poles

Five big trees must come down to provide building lumber and crating for every man in the service (page —). These New Hampshire women, whose boy friends are in the armed forces, are helping supply the timber. This mill, near Concord, is operated entirely by women—a model for the gradual female encroachment in this hitherto 100-percent male industry.

have gone. They ride logs down rivers (page 219), walk flumes, work over rafts in the booming and sorting grounds. They are "swampers," who log off the branches of felled trees with heavy axes—and this is tough work; and "whistle punks," who keep signals straight between men down in gullies or over ridges—and this is important.

They drive the big trucks which haul giant logs from the forests. They stand at the head of the bull chain which feeds logs from pond to mill, and they handle big timber—Douglas fir, Sitka spruce, ponderosa pine.

It takes fast action along the chain. Men bet they couldn't do it. They were nervous, and the women were nervous. Collisions between logs and head saws can be serious; setters, scalers, and "head doggers" who work along the line have to be strong to handle the peaveys and nimble to keep their feet free from the moving chains. Trimmermen have to think fast to work the right saws as the lumber goes by.

Women handle the night shifts alone on these jobs now.

Timber is war-critical. For every man in service, five big trees must come down to barrack him, furnish and crate his equipment, and get it to him.

Women are getting it to him. In southern mills they feed lumber to screeching ripsaws and band saws, butting saws and resaws; they stack, rack, stencil, load, and truck. Up at Turkey Pond, New Hampshire, one mill is staffed by women only.

On the windy peaks of the White Mountains, women "man" the Federal lookout stations for the first time. In western timberlands women forest rangers in lonely outposts drive pack trains, cut trails, tote guns, and keep an alert for sabotage. Like almost all of the major industries which are using women for the first time, it's the women of the men the industry loses who go into it first. Usually they know what to expect.

All This, and Railroading, Too!

The very bigness and heaviness and dirtiness of railroading have kept it a man's business in this country. Like timber and steel, it was an industry of studied jobs which took skill, stomach, and usually strength. Men dominated them monastically.

It was one of the last to go over to the use of women in all-male capacities. The industry itself has always had a longer list of jobs which women could *not* do than any other.

One by one, they have entered every sacred precinct of yard and line. Old timers have watched them with astonishment, sometimes with hostility. They are beginning to lay bets now on how long it will be before "some woman" takes 856 on its big run.

In this case, it will be some time. Locomotive engineers usually work up from firemen, and that's one job women aren't doing.

Grooming and servicing, this is mean work—but women are doing it. A big engine steams into its stall streaked with soot, grease, and smoke. They wipe it down like a lathery, muddy race horse. They put out the fire, remove the ashes, blast off the grease with live steam and chemicals, fill the sand dome, lubricate it, shine it.

Somewhere it has dropped off its grimy cars. Other women get these to clean and polish (page 216).

They pack journal boxes, operate turntables, and check cars, which means keeping track of all those numbers you see on freights (a mistake could raise havoc with a shipment of war goods); they paint, cut scrap, and handle signals and switches from coast to coast.

Those women you've seen along the track with shovels are section hands edging the ballast, burning grass and weeds, checking rails and ties. They grease switches, de-ice them in winter, and some I heard along a Pennsylvania track one January morning had even learned to speak the language.

There are women baggagemen in stations, and brakemen, flashing lanterns as you've seen thousands of men in pin-striped overalls doing all your life. Women trainmen are helping conductors (page 214); women cooks are in galleys where swaying trains and hot stoves have never permitted them before.

It takes all kinds of women to run a war. The women of the railroads are a good index of what literally keeps the wheels rolling. You'll find a tiny slip of a girl selling tickets or calling trains and walk out to the yards where great husky Slavic women are operating steam hammers.

You'll run across college-girl draftsmen, women lawyers and doctors; women telegraph operators and young kids at switchboards. You'll be surprised at the small women in tough jobs and big women in desk jobs.

You'll even find housewife drawbridge tenders and crossing flagmen.

They are all Americans, with as many races, creeds, and nationalities as there are jobs. And in this and every industry there are as many reasons for their taking those jobs as there are women.

Many have found fields opened to their talents for the first time. Many are there for the money or to follow the crowds.

Mainly, however, they are there because there *is* some man in service. They are working to supplement that slim G.I. envelope. And they are fighting to keep the country running, to keep the world supplied, to get him the stuff he needs so he can get through and get back.

Like the steel which goes from women's hands in this country to the hands of women in the Soviet. It's one movement with one idea. The same steel for men moving from the West and men coming from the East. And women to help get it there.

It all works together. And as the war goes on, the great feel of it and the great interdependence of it gather strength. It's a man's and woman's world.

DIVISION OF
PRESS INTELLIGENCE
O.W.I.
1194 - Soc. Sec. Bldg.

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Telegraph-Herald (I)
Dubuque, Iowa

DATE JUL 23 1944
p.

LABOR DEMAND HITS NEW PEAK

Hiring for New Factory Is Reason for Big Need

Hiring at the new plant of the Dubuque Garment Company, which starts Monday, has increased the labor demand for women in the Dubuque area to highest point in months, Manager William A. Madden said Saturday in releasing his weekly report.

Needed at the new factory that starts production July 31 are 100 power sewing machine operators, 12 examiners, 12 pressers, 6 bundlers, 6 floor girls, 6 clippers, 2 checker helpers, 1 checker, and several women for work allied with the dress manufacturing business.

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Other Job Openings

Other job openings for women in the Dubuque area are as follows: battery workers, 45; meat processing helpers, 20; woodworking helpers, 14; meat canning helpers, laundry helpers, glove sewing machine operators, and cut-off saw helpers, 10 each; cab drivers, waitresses, and clothing sewing machine operators, 5 each; box helpers, 4; bench coremakers, wallboard helpers, telephone operators, and institution helpers, 2 each; and a machine shop assembler, bookkeeper, and saleslady, 1 each.

Men are needed as battery plant helpers, 18; corrugated box helpers, and cut-off saw helpers, 9 each; floor and bench molders, 7; sheet metal liners, rock wool helpers, tank shop helpers, and saw mill helpers, 6 each; dairy plant helpers, truck unloaders, foundry helpers, taxi drivers, coal truck drivers, semi-truck drivers, and lumber helpers, 5 each; dock hands, machine operator trainees, machinists, insurance salesmen, laundry helpers, glass polishers, and bricklayers, 4 each.

Many Men Needed

Dump truck drivers, brass foundry workers, molding machine operators, construction workers, and routemen, 3 each; dairy buyers, janitors, sash pinners, tack welders, engine lathe operators, boat yard workers, flask makers, turret lathe operators, railroad firemen, printing pressmen, hog helpers, rip-saw operators, plant truckers, auto body repairmen, institutional workers, auto mechanics, wallboard helpers, and truck drivers, 2 each.

Bolt tightener, calf skinner, belt sander operator, clamp helper, boring machine operator, auto body painter, trailer truck driver, roofer, hedge trimmer, lumber truck driver, bench coremaker, sheet metal foreman, cab company manager, tire vulcanizer, accountant, bartender, cabinet maker, glue clamp operator, fireman, shipping clerk, kiln worker, city salesman, janitor, shoe crowner, motor rewinder, and dry cleaner truck driv-

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Oregonian (IR)
Portland, Oregon

DATE
p. FEB 13 1944

Banks Report 687 in Service

Institutions Add Women to Staffs

BY FRANK BARTON
Financial Editor, The Oregonian

The 142 banks and branch banks in Oregon have contributed a total of 687 men to the armed forces since Pearl Harbor, according to a survey of bank manpowor just completed for the Oregon Bankers' association by Elwain H. Greenwood, secretary of the association.

This contribution to the nation's men in uniform was made from a total bank personnel in the state which on January 1, 1941, consisted of 1577 men and 836 women, the report said.

Women Filling Jobs

The heavy drain on male bank personnel resulting from the needs of the various branches of the service, coupled with the drift of men to wartime industries, has resulted in a greater employment of women than ever before to fill vacancies in bank staffs, Greenwood reported. As a result, bank employes of the state are now divided as follows: Male personnel, 903; female, 1692.

Placed on a percentage basis, men comprised 65.3 per cent and women 34.7 per cent of the total of bank employes before Pearl Harbor. The condition is now reversed, with men making up 34.8 per cent and women 65.2 per cent of the bank personnel of the state, Greenwood said.

Load Increasing

In spite of the fact that the banks had to hire much inexperienced help to fill vacancies and train these new employes in the fundamentals of banking, the load on the financial institutions has been increasing, it was pointed out by Greenwood. The banks are handling ration banking and war bond sales for the government and, added to that, their regular business is greater than ever before, as they are called upon to co-operate in every possible way with industry and agriculture in the war-production program.

The figures on bank manpower were turned over to L. C. Stoll, war manpower director here, in order to give him a picture of the personnel situation in the banks of the state. Banks in the Portland area were some time ago classed as "locally needed." Bankers have stressed the desirability of extending this classification to all banks in the state

U. S. Department of Labor
WOMEN'S BUREAU
Washington

April 24, 1944

Proportion of Women Wage Earners to Total Wage Earners in Selected War Industries - June 1943 - January 1944

Industry	Percent women wage earners -				
	June	July	August	Sept.	Jan.
Ordnance, Total 1/	29.0	31.2	32.0	32.4	32.8
Guns and Mounts, 20-MM and above	12.5	14.6	14.7	16.1	17.6
Guns and Mounts, below 20MM	32.5	35.8	36.1	36.4	35.9
Artillery ammunition	37.3	39.5	39.4	39.5	39.5
Small arms ammunition	47.5	46.6	46.6	46.6	+ 43.2
Ammunition loading and assembly	37.9	46.7	44.4	44.5	49.1
Combat tanks and parts	11.5	13.3	15.3	17.2	19.6
Fire control instruments	36.7	38.5	38.7	38.8	+ 35.9
Iron and Steel Products, Total 1/	23.3	23.6	24.6	24.8	24.8
Nonferrous Metal Products, Total 1/	40.7	43.6	44.7	44.4	41.1
Jewelry, silverware & plated ware	46.1	45.4	45.5	43.3	+ 38.8
Watches and clocks	56.5	57.7	58.9	59.2	57.8
Electric Machinery, Total 1/	46.4	45.8	46.1	46.5	47.2
Electric motors and generators	36.7	37.4	37.6	37.5	+ 32.8
Radio and radar	53.8	50.1	50.8	51.5	+ 51.7
Radio tubes	79.0	79.7	74.5	74.4	+ 75.4
Communication equipment, NEC	51.4	51.9	50.8	52.5	54.5
Machinery (except Electrical) Total 1/	15.4	15.6	16.4	16.9	17.2
Machine tools	9.5	9.8	10.1	9.8	+ 8.8
Transportation Equipment, Total 1/	18.3	20.9	22.1	20.9	23.4
Airframes	38.0	37.9	38.4	38.8	38.3
Engines, aircraft	23.0	24.7	26.3	27.7	27.9
Propellors	19.9	20.3	20.4	19.8	20.9
Gliders	23.9	24.6	24.9	25.0	+ 20.4
Aircraft Acc. and Misc. Equip.	39.0	32.8	32.7	33.7	+ 37.6
Aircraft instruments	41.1	39.9	39.9	41.0	44.5
Shipbuilding and repairing	7.2	8.0	8.8	9.4	10.2
Miscellaneous industry					43.4
Prof. and sc. instr.	32.1	37.6	36.6	35.9	34.6
Surgical, medical, dental equip.	47.3	46.9	44.2	43.6	+ 42.0
Optical instruments and lenses	54.0	47.7	59.6	60.6	64.0

~~1/ For detailed breakdown of industry - see Statistical Files.~~
~~Source - Tabulation of data reported on form W.P.B. - 732.~~
~~For aircraft - B.L.S. monthly report.~~

Many copies

Women serving in armed forces March 1944

Wacs	62,860	Army nurse corps	36,000
Waves	56,000	Navy nurse corps	7,466
Spars	7,195	Nurse cadet corps	37,000
Marines	15,639	Red Cross field workers	9,166

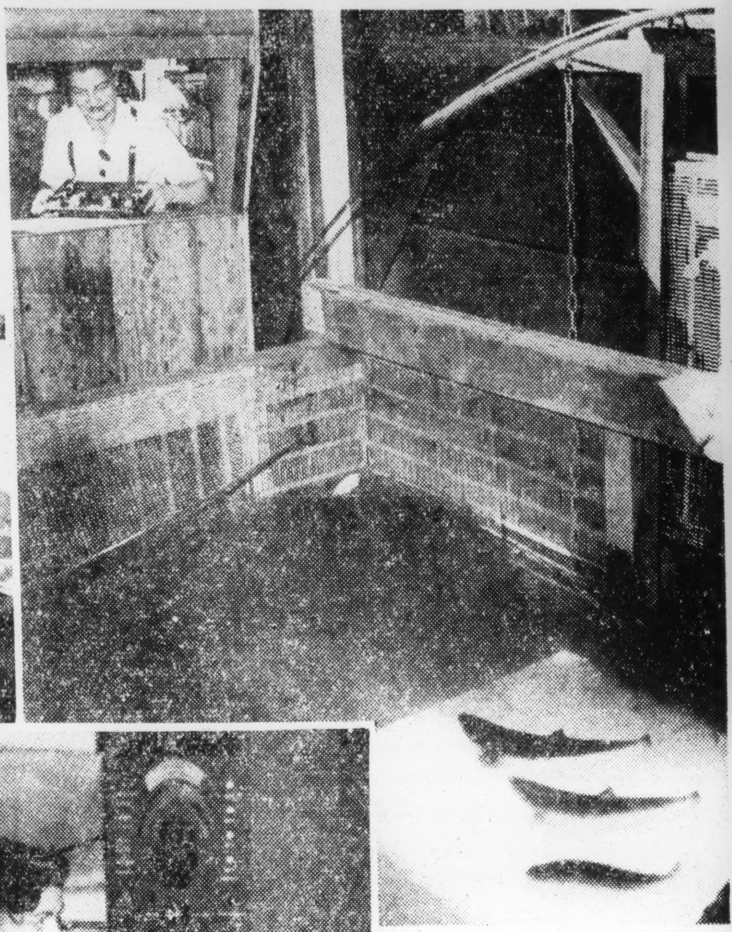
Space

Red Cross Production Corps - Approximately 3,500,000 women volunteers in August 1944

king, Food
riday

Today's Woman

Fashions, Interior Decoration
Wednesday



United States Army Engineers

The Columbia River corrals girls for two of its most exacting jobs: charting the channel and clocking the fish. Upper left: Observation deck of United States Engineers' launch Bonneville, where Lucille Strauss and Marguerite Parker, sextant observers, are taking their left and right angles, respectively. Right: Mrs. Ruby Warren counting fish at Bonneville Dam and three salmon passing over the flash board. Below, left to right: Cabin of the Bonneville with Lucile McCollum operating three-arm protractor, Marguerite Parker the depth finder, and Nedra McCoy the recorder.

Girls Qualify Charting And Clocking

By Kate Archibald

Written for The Christian Science Monitor

Portland, Oregon

Add to the list of unusual wartime occupations for women, that of charting the channel at the mouth of the Columbia River, and counting and identifying salmon at Bonneville Dam, 150 miles farther up on the Columbia.

In both instances women are employed by the United States Army Engineers and were hired because of the acute manpower shortage. In both cases, the Army says that women have proved their ability to fill these positions.

The work of hydrographic crews on the Columbia with its swift currents and changing water levels, and ocean tides constantly altering conditions on the floor of the channel, is at all times highly portant. Dredges are always work eliminating obstacles revealed by the hydro surveys.

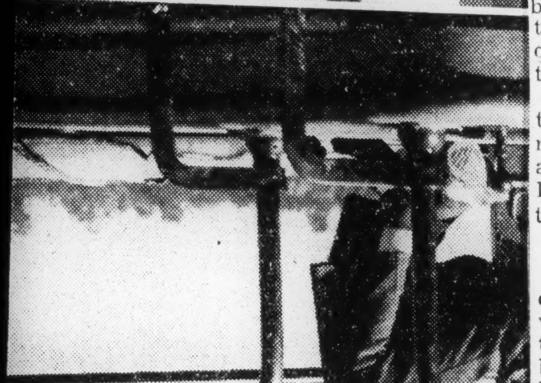
Channel Work Critical

In time of war this hydrographic work takes on added importance where deep-draft vessels bound for fighting fronts must have a clear channel, and the work of girl crews charting the channel becomes essential and critical.

While the fish-counting work of young women at the Bonneville Dam is not essential to the prosecution of the war, it is important in the lesser war of opinions which is continuously being waged as to whether or not the salmon industry is being depleted by such large hydroelectric developments as the dam. The actual purpose of the counting, however, is to keep records of the runs for Federal and State Fisheries Departments.

The work of the all-girl charting crew is greatly simplified by, and centers about, that canny modern invention, the depth finder, which has been in operation for about three years. The Sonic Depth Finder, in use on the Columbia, not only records accurate soundings by means of electric impulses but reveals the type of bottom formation whether it is sand, mud or rock.

While the Depth Finder is recording this information two sextant shooters out on deck fix their instruments on certain landmarks —or they may be buoys or other permament objects in the water— take a reading and call the angles to a recorder inside the cabin. The angle recorder repeats the



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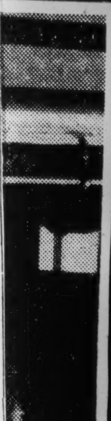
The two sextant shooters work together, sighting the location markers and taking right and left angles with their sextants to establish the location on the chart as the boat cruises along.

Coastal Work, Too

Although members of the girl crew had become expert in these various operations, when it came to "manning" the new survey boat, the "Kalama" which was built to be used outside the mouth of the river, Army officials said "no." Girls might do very well on the upper and lower river, they said, but not in the more hazardous and sea-faring work outside the river's entrance, down the coast to Coos Bay. But today, they have changed their views. All objections have been met and the girls are doing what is described as an excellent job outside.

Meanwhile, day after day, and hour by hour, a four-girl crew works inside the intricate fish-run compartment at Bonneville. Clocking fish as one would count customers passing through a store entrance would be simple; but each fish as it swims through must be identified as Chinook, Blueback, Chum, Silver salmon or Steelhead trout. Other commercially valuable fish such as shad and sturgeon must also be counted.



OCCUPATIONS + INDUSTRIES - 1945

DIVISION OF
PRESS INTELLIGENCE
O.W.I.
Tempo V Bldg.

PH. Ince —

SY. Return to Robinson

Sun
New York City [illegible]
109 2 copies made
DATE NOV 6 1945
p.

Women in the Peace

Numerous Opportunities for Them in Small Businesses 'If They Have Gumption.'

By MARY WATTS.

Opportunities for women in the post-war world pour out as abundantly as candies out of a generously filled Christmas cornucopia when Jane Todd talks about them.

Miss Todd, who is deputy commissioner of the Department of Commerce, heads the New York Women's Council appointed by Gov. Dewey to help women readjust to peace conditions in obtaining gainful employment.

First among the opportunities for women in this State, the council is taking up the subject of small businesses. And, although it hasn't anything to do with women's place being in the home, Miss Todd does suggest that women who can take the special skills in cooking, child care, &c., which they have developed in the home out into the world may find it very lucrative.

Food Businesses.

There's food first of all. Miss Todd's optimism on what women can do in small food businesses—and later these businesses may cease to be small—is based on what they have already done. Hundreds, probably thousands, of women are now running prosperous businesses in New York State who started their enterprises in their own homes when relatives and friends asked if they wouldn't be willing to make some of those delicious cookies or jellies for pay.

There's a woman who makes wonderful lacy chocolates, which are so flavorful and so pretty that hostesses want them for their best parties. Another one makes delightful cookies, decorated for special occasions, which are pleasing to children because of their gay hand-done turkeys, sailboats, &c. Another one makes small loaves of highly nutritious bread and puts in such a lot of vitamins that the bread is recommended by physicians. She started by baking four loaves, and now she bakes 1,500, not by herself any more. A more limited success, but one that is just as sound, has been scored by a housewife who makes such delicious lemon butter and damson plum conserve that everybody who has ever tasted them wants to buy more to take to people as a special gift.

Miss Todd proudly showed some of these products of clever New York State women, with samples of which she has filled a deep basket.

to get their fine linens properly done up. Small laundries which could be counted upon to do these things with skill and care would find a place in many communities."

"How about upholstery for women?" I asked. "There never seem to be enough upholsterers anywhere, and they are so overworked that they never seem able to do anything much sooner than six months from the time it's ordered."

"Women can do upholstery perfectly well," said Miss Todd; "some of them do it now. They teach girls how to do it in our State colleges."

The State of New York is making a detailed survey of different localities which will serve as a guide to people who wish to start small businesses, and this survey will be used to aid women as well as men. It will show the population and financial condition of a town, whether the community is a growing or a declining one and whether it could use an additional restaurant, snack shop, laundry or flower shop; whether it is a community center for farm folks who might buy clothes and furniture, and whether a children's shop or a decorating shop might flourish there.

Children's Shop.

Neighborhood children's shops offer an opportunity in many places, Miss Todd said. Mothers find it possible to bring their children to a shop that is near their homes to try on clothes when it would be pretty hard to take them to a center a couple of hours away.

The council is doing everything possible to be of help to service women veterans and to women war workers who, because the special skills they learned in war plants may no longer be needed, will need retraining, Miss Todd said. Clinics will be held to consider different types of jobs, beginning with the small businesses. Women experienced in special fields will confer at these clinics.

"Women who have gumption will find any number of opportunities for gainful employment in this State," concluded Miss Todd.

Poultry Raising.

Asked if women also figure much on New York chicken farms, she said they did and that during the war while the men were away they learned so much about the business that they can now run the chicken farms themselves if it is necessary.

"In fact, one girl I know just let her father run her chicken farm for her while she was away during a war job," she said. "Now she's back, she's taking it over again."

Apple Growing.

Orchardry is also a favorite occupation of New York women in the counties where apples are grown, Miss Todd said.

"But can the women pick the apples?"

"They learned to during the war when labor was unobtainable. New York State had its biggest apple year two years ago, and when I was up at Plattsburg at the apple harvest season all the women of the neighborhood were picking apples, including the banker's wife."

"Restaurants, food shops and snack shops seem to be excellent small businesses for women, and there are many communities in the State which are in need of such enterprises.

At the Airports.

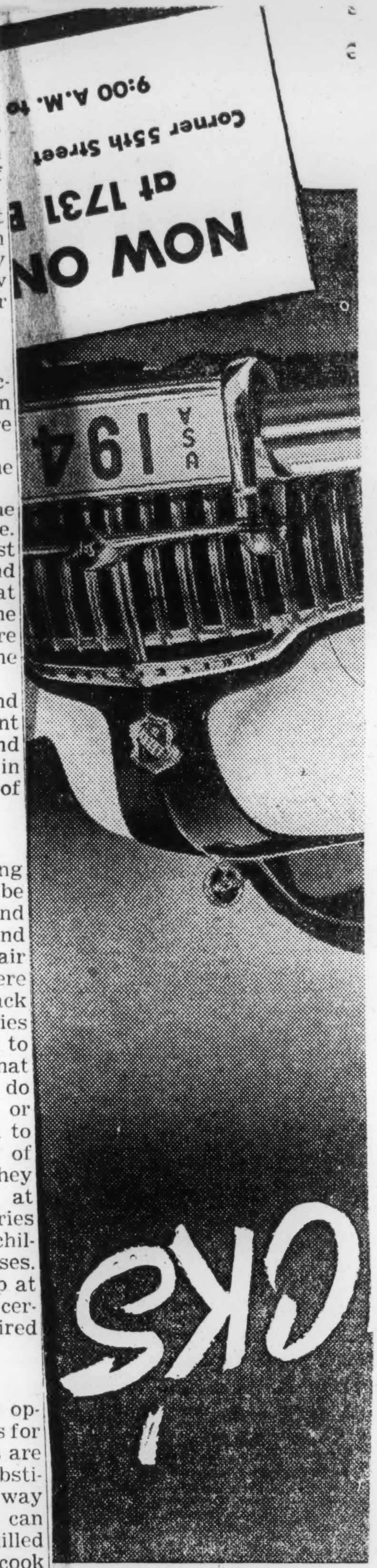
"A big opportunity for starting small businesses, I believe, will be at the airports. There are bound to be many more airports and immensely more civilian air travel. And at the airports there will be need of restaurants, snack shops, beauty shops and nurseries for babies. People will be able to come and go with such speed that they will come to the city to do shopping, for social purposes or entertainment, and will return to their homes at night instead of staying over in the cities. They will want many conveniences at the airports, such as nurseries where they can leave their children in charge of trained nurses. [illegible] ole little cities will grow up at [illegible] airports, and women can cer[illegible]ly help to provide the required services.

Home Services.

"Then, of course, there are opportunities to provide services for the home. Domestic servants are so hard to get that some substitutes must be provided in the way of competent services which can be called upon to send skilled workers to clean the home, cook a dinner occasionally, take care of the children when the parents want an evening out or when mother wants an afternoon off to play bridge or go to the theater.

Laundries.

"Laundries offer another field for skilled women. Nowadays women don't know where to turn



sion to accompany him i
my transport, piloted by
obert Broff.
They included his brother,
Fred V. Frost of the Jac
Miss. recruiting office.

OCCUPATIONS - AdVERTISING

Oct. 21, 1942

RUNNING PLANTS OR OWNER OR PRESIDENT OF CO.

Managerial, Advertising, Expert Sales Work

Miss Vivien Kellems, N.Y.C. Manufactures cable grip invented by her brother (Kellems Products, Inc., N.Y.C.) (cable grips are used in the handling and transport of heavy explosive shells) ($50,000 salary)

Mrs. Viola Palmgren Makeever(Madison M.) operating superintendent, part owner of plant, and authority on plastics, Makalot Corp., Waltham, Mass. (Is providing the millions of pounds of plastics needed for Army, Navy and Air force materials) (In last 10 years has become one of the most amazing figures in the amazing industry. Has won 2 awards from the Modern Plastic Academy.)(Augusta, Georgia Herald, 8-9-42)
Modern Plastics Jan 1943 p.142

Miss Lucy Rogers Walsh, Ill. Pres. of Rock Island Southern R.R. (Has had this position since 1932.)(Tribune &nStar 7-12-42, Terre Haute, Ind.)

Mrs. I. Dingle. One of the two/women railroad presidents in the country . Cassville & Exeter line in Missouri. (Tribune & Star 7-12-42 Terre Haute, Ind.)

Mrs. George Backer-publisher and President of N.Y.Post. (Had worked with husband who had formerly managed paper.)

Miss Dorothy Shaver - vice-pres. of a N.Y.City Dept. store. Is paid $42,500 by Dept. store and still holds this job, but also serves as general consultant in merchandising in office of Quartermaster General. (Sunday Advertiser, Boston, 6-14-42)

Mrs. Rose Murren, Gettysburg, Pa. Farmer "Master-Farmer", self employed. Runs 140-acre farm, raises prize-winning crops while raising 3 sons and 6 daughters. (Commercial Appeal, Memphis, Tenn.

Mrs. Lillian S. Dodge-Pres. cosmetic firm (Harriet Hubbard Ayer, Inc.) Is probably the highest salaried woman in the U. S. $100,000
Sunday Advertiser -Boston, 6/14/42

Miss Beatrice Jones(Mrs. J. B. Deacon, wife of vice-pres. Schenectady Distilling Corp.) She is Pres. of N.Y.Life Underwriters-first woman to become president of underwriters. At 30 was director of women's personnel for Standard Oil at $5,000.

Mrs. Ruth Le Bron, sales promotion manager for Oppenheim, Collins & Co., N.Y.C. (N.Y.Times)

Miss Christine Le Vathes, advertising director, for Jay-Thorpe, Inc.

Mrs. Claire Lang-advertising director of fashion and publicity for Franklin Simon & Co. N.Y.City (N.Y.Times 8-27-42)

Miss Kathleen Moon, expert salesman of auto parts for Rupley Co., Houston, Texas. (Press, Houston, Texas 7-7-42

Mrs. Betty Jones Bradford, Laurel Miss., Agent & distributor of Times-Picayune. Self employed. First woman distributor in her section of country. (Times-Picayune, 7-12-42-

~~Viola Palmgren Makeever~~

Dr. Elise Strang L'Esperance-physician. Founder and manager of the Kate Depew Strang Cancer prevention Clinic of the N.Y.Infirmary for Women and Children. Just awarded the Clement Cleveland medal. N.Y.Times 9/23/42

Feb 1943

Our newspaper clippings carry stories which run about as follows:

A woman is manager now of an automobile service station (there are many stories of girls as filling station attendants, in various parts of the country, and some companies are making it a national policy to use girls in this way.)

A woman buys all the steel for one of California' big shipyards.

Two women are resident doctors at a hospital, placed as internes - due to shortage of men.

The physical education teacher for boys in several junior high schools is now a woman.

A woman is president of a dry goods emporium; took her chief's place.

A woman is manager of a firm operating truck-tractors and semi-trailers - taking the place of her husband now in the army.

A woman recently became director of advertising functions of a large women's specialty store in New York City, taking a man's place.

A woman has replaced her husband as conductor of a morning radio "spot".

A woman has been hired as a barge captain because of man shortage.

Two women have replaced men engineers as master control-room operators in a radio station.

More than 55 classifications of jobs in banks are now being offered to women.

Foundry managed by woman makes for home-town hero to drop. The woman was Mrs. L. M. Cleaves-Byers, foundry manager and owner, Today she is one of the few of her sex in steel. She knows all about metallurgical formulae, pouring off moulds, tapping out cupolas and pattern making as result of 40 years in business. She began as a bookkeeper in 1901 after graduation from Michigan. Detroit News Pictorial, Sept. 6 1942.

Woman earns post high in exchange. Miss Mae E. Daly, first woman to hold titular executive rank in the New York Cotton Exchange. (Times, New York, Nov. 7, 1942)

Utility Head is appointed to Board of Education. Miss Mary E, Dillon of Brooklyn, president and board chairman of the Brooklyn Borough Gas Company, was maned by Mayor LaGuardia yesterday to succeed William R. Crowley of Brooklyn as a member of the Board of Education to serve until 1946. She is one of the few women to head a public utility company. She went to work for the company as a clerk in 1903 and later became general manager and vice-president. She is now serving as chairman of t Brooklyn Defense Office, a post to which she was appointed by Mayor LaGuardia. (N.Y.Times, Nov. 9, 1942)

Headlines methods in ads favored by new Director. Miss Elizabeth Flannery takes publicity post at Hengerers, explains views. A native of Detroit she was graduated from Wayne University and also attended the New York University School of Retailing. She served with the J. L. Hudson Company for five years, the Ernest Company for two years and then Russek's in Detroit, for five years. At Hengerer's she succeeds Gordon J. Weisbeck, who resigned to enter a war industry. (News, Buffalo, Sept 1, '42

Virginia Gates has been appointed director of advertising and sales promotion for Mary Dunhill, Inc., perfume and cosmetic house, it was announced yesterday by Arnold L. Ogden, president of the company. Miss Gates previously served as publicity director of Saks-Fifth Avenue and of Lennen and Mitchell, advertising agency, as well as foreign advertising manager of the Dorothy Gray division of Lehn and Link. (N.Y.Times, Dec. 10 , 1942)

Mary J. McClung has been appointed advertising director of the New York Post, succeeding Natt A. Getlin, who resigned. Miss McClung, who joined the newspaper's advertising department in 1937, was previously a member of the advertising staff of the New York World-Telegram and of the Pittsburgh Press. (N.Y.Times,Nov. 13, 1942

Miss Margaretta Van Rensselaer Schuyler, manager of the furniture department of W. & J. Sloane, has resigned, it has been announced by David J. Brunn, general manager. She will become retail home-furnishings coordinator of Montgomery Ward & Co. Starting as a member of the decorating staff and later becoming manager of the fabric department, Miss Schuyler has been with the Sloane organization for the last eight years. Four years ago she was made furniture manager.(Sun, N.Y.C. Oct. 26, 1
1942)

Miss Davies, a graduate of Bucknell, was recently appointed advisor to Lieutenant Br
Brehon Summerville , commander of Services of Supply, U. S. Army/ When women learne
their place was in the factory, the shop, and the foundry, as well as in the home, numerous difficulties and questions popped up for plant managers who once thought operating a lathe, a screw-driver and a welding torch was strictly a man's game. So to unscramble such dilemmas, industrial executives - men and women both - gathered in Camden this week for a big conference on Women in Industry, sponsored by the Manufacturers Committee of Camden County and the National Assoc. of Manufacturers. Here are some of the experts - Ellen M. Davies, personnel manager, Chase Brass & Copper Co, Waterbury, Conn.; Constance Ekstrand, director of women personnel, Todd Hoboken Dry Dock, Inc., Hoboken, N.J.; (Bulletin, Phila. Pa. Jan.22,
1942)

OCCUPATIONS + INDUSTRIES - AGRICULTURE

See Also WOMENS LAND Army
OFFICE OF FOOD PRODUCTION

WOMEN IN THE WESTERN LUMBER INDUSTRY

In general, women for some years have been employed in some West Coast lumber and Plywood mills. In logging camps it has been for some time customary to employ women as waitresses in the dining halls. In the lumber mills, the employment of women in pre-war times was usually limited to the planing mill and box factory departments where only light handling was included. Usually the jobs involved such tasks as sorting, assembling, bundle-tying and helping, but not machine operation.

A significant feature about employment of women incidental to war has been the great expansion of variety of jobs. These new jobs have involved in some cases heavier physical exertion, the assumption of individual responsibility, operation of machines, and "dirty" operation involving contact with grease, paint, sawdust, etc.

In general, the women have done surprisingly well in those posts to which they have been assigned. The general pattern has been to extend the employment of women outward into the general mill from the planing mill or the box factory. Often, those women who have acquired a general familiarity with the industry in these departments have been drawn upon to staff the new jobs, and their vacated positions have been filled with new women employees.

Employment has by no means been confined to any one type of woman. There have been young high school graduates, college girls working in off seasons, soldier's wives, housewives, bigboned middle-aged women, and even a few elderly women. They have come from many different kinds of homes. One sees red finger nail polish and stylish slacks and heavy leather gloves and coveralls.

The percentage of women employees varies considerably with the different plants. In some lumber mills, now approximately 20 per cent of the employees are women.

Here some of the jobs they are doing:

> End painting, pulling lumber (dry and green) from chains; assembling bundles; tying bundles; tallying; helping on edgers, trimmers, re-saws, and matchers, and gang saws; operating conveyor control, boring machines, yard locomotives (diesel and electric), overhead cranes; helping at dry kilns; grade marking, log scaling; picking orders.

No standard uniform has been adopted by Western mills, but slacks with jacket or sweater are almost universally popular, with occasional deviation to denim overalls or coveralls. Managements have insistently cautioned against loose clothing, urged low, flat heels on comfortable shoes. But attempts to standardize women's hair and head coverings have met with little success. A great many women seem to prefer to work bareheaded, even if sawdust is flying in the air.

Women-As War Workers On Farms

It has been said that an army marches on its stomach, and certainly we have come to realize that nutrition is an essential part of the military program. Also as never before has come the recognition of the value of good food in promoting the physical fitness and the efficiency of our soldiers on production lines -- and in fact of our whole civilain population. Moreover, the United States is being looked to more and more as the breadbasket to help supply our Allies with nutritious foood.

Farm work, therefore , is of vital importance in our war effort. It is also a field of work which is relying to increasing extent on woma n labor, as male workers have become scarce in many of the rural areas. An estimated 600,000 women will be in agricultural employment by the end of this year- that is 100,000 more than at the close of 1941.

Some time ago the Bureau of Agricultural Economics expressed the expectation that one million persons would leave ~~the~~ farm work to go into the armed forces, industry, and other employment, and that in addition to replacement of that million workers on farms , 200,000 more would be needed for expansion during the next season. Though the Manpower Commission may check the exodus of labor from the farms, it is obvious that many more workers will be needed , particularly to handle the crops during the peak periods. Women must constitute a large part of the extra force needed , such women to be drawn from the rural women not now employed and also from women in non-farm environments.

This year's crops were saved largely by the use of women with the help of boys and girls throughout the agricultural areas. Reports indicate that 14 percent of the farm workers last summmer were women as compared with 5 percent in 1940. Reports from the Middlewest showed women running tractors; from new England, of women doing all types of dairying and market gardening work; from New York and New Jersey, of women as pickers of all types of crops

Indications are that farmers are willing to to use women as emergency farm labornext season. But there is a strong feeling to the fore that an official organization can be set up in specific areas, to carry out a definit program to solve the major difficulties , such as housing, supervision of young women, and so on, and to promote the most effective utilization of women and girls.

Agriculture, Forestry, & Fishing

New York

To ofset the critical shortage of farm hands in Onondoga County, women and girls are being hired for harvesting. On the Smith-Canastota Corporation farms, 20 of the 50 hands were women. The corporation has never employed women previously. (Syracuse Herald-Journal, September 9, 1941.)

7,000 High School Boys Here Ask for Jobs On Farms in Summer Paying $20 a Month

Cooperating with the United States Employment Service and the agricultural extension service of Cornell University, the Board of Education has mapped a program for high school students who desire to work on farms in this State during the Summer vacation, thus helping to offset the present shortage of farm labor. Seven thousand students in the city's high schools have applied for such jobs, it was disclosed yesterday.

According to school authorities, a survey by Cornell showed that this city eventually would be asked to supply 25,000 farm workers to replace those called to military service. Ten thousand would be needed for general work this Summer and 15,000 for seasonal work, such as picking fruit and harvesting other crops. Schoolboys more than 16 years old or who will be 16 by July 1 are eligible for such jobs, which will pay about $20 a month plus board, room and transportation.

A farm adviser has been designated for each of the schools whose pupils are eligible to take farm jobs this Summer. Only boys are eligible and these must have the consent of their parents, who have been told that the hours will be long and the work hard but healthful.

Applications filed by students will be cleared through the United States Employment Service, which will place the boys on farms after consultation with agents in rural sections. Parents of pupils have been assured that boys will be placed on farms whose owners or operators are responsible persons.

Newtown High School in Queens is giving farm courses to 350 boys enrolled in that institution and also to 400 boys from other high schools. These courses, which deal with such practical matters as harnessing and driving of horses, operation of tractors, handling of farm implements and care of poultry, are conducted two hours a week for fifteen weeks.

Boys from city high schools also will have an opportunity to train for farm work, starting today, at the New York State Institute of Agriculture at Farmingdale, L. I. They will be required to pay $1 a day for room and board, as well as their own bus fare.

quently Selective service headquarters had expected congestion might arise at certain registration places, notably those of Local 20 at 389 Madison Avenue and Local Board 31 in the Hotel Delmonico, Park Avenue and Fifty-ninth Street.

By noon a line of 200 had formed outside the registration place of Local Board 31, and officials ordered the twenty-five registrars who were on duty to start enrolling the men. There were more than 400 men in line at Local Board 13, 381 Fourth Avenue, while lines half a block long or longer were not uncommon at other registration centers.

When Local Board 20 appeared in danger of being swamped three motor buses, each manned by ten deputy registrars, came to its assistance from headquarters and soon stabilized the situation. By mid-afternoon the length of the line waiting there had been reduced to a small fraction of its earlier dimensions.

The men who registered yesterday are not liable, under the present law, for combat service, but they are to receive later a three-page questionnaire intended to provide information on their skills and experience. Paul V. McNutt, chairman of the War Man Power Commission, has described the registration as an "occupational census" intended to make possible "ac-

East 143d Street and Emil Schram, 48, president of the New York Stock Exchange.

Elsewhere in the city and its environs the registration went along in much the same smooth, cheery fashion that marked it in Manhattan. In New Jersey a spokesman for Lieut. Col. Edgar N. Bloomer, acting State draft director, expressed belief that 70 to 75 per cent of the men in the 45-64 age group had registered when the boards closed at 5 P. M.

Yesterday's was the fourth registration since the selective service system was enacted into law. The first, in October, 1940, covered men from 21 to 35 inclusive, who numbered 16,886,591; the second, in July, 1941, for men who had become 21 in the interim, enrolled 752,527, and the third, last February, for men 20 and 21 and 36 to 44, inclusive, covered about 9,000,000.

Show to Aid Harlem Children

A benefit show for the Harlem Children's Camp Fund will be held at the Cosmopolitan Opera House, Fifty-fifth Street between Sixth and Seventh Avenues, on May 16 at 8:30 P. M. Noble Sissle is chairman of the entertainment committee sponsoring the show. Todd Duncan, Ella Logan, Kenneth Bowers and Gil Stratton are among the performers who will appear.

World War II
Women's Land Army
Women in Agricultu

To Discuss Farm Women's War Contribution

By Mary Hornaday

Staff Correspondent of The Christian Science Monitor

Washington, D. C.

Amazing things American farm women are doing to help win the war economically, socially and spiritually will be reviewed at a Kansas City, Mo., conference Oct. 30 and 31, sponsored by the United States Liaison Committee of Associated Country Women of the World.

The liaison committee is a clearing house for the 21 organizations in this country which are members of the international organization of rural women.

Theme of the conference will be "Rural Woman's Contribution to War and Peace."

When the Kansas City meeting was planned a year ago it was anticipated that 3,000 women would attend from every state, coming by bus and automobile.

With gas-rationing, tire-saving and manpower shortages making unforeseen problems on farms, attendance will be cut down considerably. According to Miss Grace E. Frysinger, Senior Home Economist in the Department of Agriculture and Government liaison officer with the Associated Country Women, about 300 women are now expected from about 35 states. "These women," she points out, "will be outstanding leaders and there will be messages from outstanding personalities interested in rural women."

Tells of Women's Work

Just back from a seven weeks' official inspection trip of home demonstration work, an educational service in homemaking for rural women, Miss Frysinger reports farm women doing "amazing" things. "I saw 10-year-old girls and 60-year-old women driving tractors," she says.

"I saw women picking corn and operating the hay stacker. They are doing farm chores and in many cases are now operating the farms since husbands and sons have gone to war. We are beginning to repeat the story of the brave women of England and Canada on our farms and in our towns and cities as well."

One of the objectives of county home demonstration agents to be pushed at the Kansas City meeting is the mobilization of 1,000,000 volunteer "Neighborhood Leaders" o contact farm families and help hem understand democracy and their part in winning the war. "Tens of thousands of these leaders are already functioning effectively," Miss Frysinger reports.

County Home Demonstration Agents are active in helping rural families increase production, improve food habits, food selection and preparation and to can, dry and store food for winter use. "A Victory Garden on Every Farm" was their slogan for 1942.

Farm women and girls are being taught by their county agents to revamp clothing, recondition household equipment and furnishings, to save metals, rubber, fats, burlap and paper and to help prevent loss through fires, rodents and insects. Last year County Home Demonstration Agents helped more han 1,000,000 women and girls to make and remodel clothes, with an estimated saving of about $4,000,000.

Home Demonstration Agents are also teaching rural families to make wise use of money to reduce debts and to purchase war stamps and bonds. Last year over 94,000 women and girls kept home accounts as recommended by Home Demonstration Agents and 255,600 followed their recommendations in buying food, clothing and taking care of other home needs.

Inter-American Delegates

This year's meeting of the National Home Demonstration Council and the U. S. Liaison Committee is to have an inter-American slant, with Miss Mary Winslow, U. S. delegate on the Inter-American Commission of Women, Señora Maria Currea de Aya, of Colombia, and Señora Ana Rosa S. de Martinez Guerrero, Chairman of the Inter-American Commission of Women, scheduled to speak.

There will be five conference sessions, presided over by Mrs. Lyda L. Hall, President, National Home Demonstration Council; Mrs. J. Wayne Reiner, Vice-President, National Home Demonstration Council; Mrs. Guy Roop, Chairman, U. S. Liaison Committee; Mrs. Henry Mies, President, Associated Women of the American Farm Federation; Mrs. F. Wayland Ayer, President, National Farm and Garden Association, and Mrs. F. M. Cain, President, National Master Farm Homemakers' Association. Forum discussions will be led by Drummond Jones, member of the Office of War Information.

To bring the results of the conference to thousands of farmers' wives kept home by the war emergency, Home Demonstration Leaders may later hold miniature one-day conferences in their own counties, presenting and discussing the same papers that are to be read at Kansas City.

cree such actions by the Italian authorities took place.

'This is nothing less than a war of absolute extermination of the Slovene nation," he added. "The Slovenes are undergoing the greatest tragedy in their history. In one year they have lost almost a third of their entire population."

'Gas' Ration Unit Cut To Three Gallons In Six More Provinces

OTTAWA, Oct. 20 (AP)—Reduction from four to three gallons in the value of gasoline ration coupons in Quebec, Ontario and the four western provinces was announced by the Munitions and Supply Department.

The change, effective at close of business Oct. 17, put all of Canada on the same gallonage basis. The coupon value in the maritime provinces has been three gallons for some time.

Motorists who are placed under the new "AA" category will receive 48 gallons to run their cars until April 1, when new gasoline ration

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Text on Farm Labor

By The Associated Press.

WASHINGTON, March 30 — Folowing is the text of a statement read by President Roosevelt at his press conference on steps being taken to supply needed farm labor:

We have only estimates as to the number of dairy workers needed. The extension service in Ohio indicates a shortage in that State of 2,500 to 5,000. On this basis, there should be a national shortage of about 50,000. To relieve the situation these steps have been or will be taken:

I. The War Manpower Commission has directed every employment office to list the names of farmers wanting to employ dairy workers.

II. Release of men from Army.

The War Department has taken the following action with reference to releasing men 38 years of age and over from the Army:

1. Discharge of such individuals will cease after March 31, 1943.

2. Effective April 1, 1943, such individuals will be transferred to an inactive status in the Enlisted Reserve Corps, subject to the following conditions:

a. The man must request transfer to an inactive status, to enter an essential industry including agriculture, accompanied by a statement from the War Manpower Commission to the effect that his release is desired.

B. The man will be recalled to active duty upon request of the War Manpower Commission.

The details of release, control while on inactive status, and recall, are being worked out by the War Department and the War Manpower Commission (Selective Service system) and will be issued within the next few days.

This action will mean that the man who is placed in the Reserve Corps must continue at work in some essential occupation approved by the Selective Service. There are only 500 over 38 years of age listed as dairy farmers or dairy farm hands, but thousands listed as farmers or farm workers have had experience that would qualify them as dairy workers.

III. Registrants 38 to 45.

Chester Davis [Food Administrator] is directing the county war boards [composed of farmers] that wherever there is a shortage of dairy workers they should secure from the local Selective Service boards the names of registrants between 38 and 45 who are in occupations which are non-deferable and who have experience as dairy workers or farm workers. They will be urged by the county war board and the local board to seek reemployment as dairy workers.

IV. Conscientious objectors.

In this group there are 500 experienced dairy workers who, according to General Hershey, can be furnished today to dairy farmers. An additional 1,800 with farm experience would probably make good as dairy workers and are now available.

V. Men physically disabled.

There are 2,000,000 between 18 and 45 who are in 4-F because of physical disability. Of these, 6,200 bbetween 18 and 37 are experienced dairy workers, but are not now employed on dairy farms. Many thousands of others have had general farm experience. The local boards wiiil be directed to send for these dairy workers and urge them to return to their former occupations. If they refuse consideration will be given to asking the Wad Department to waive physical disabilities where such disabilities are so slight that the registrant could be assigned to limited service.

VI. Registrants over 45.

County war boards will be directed to secure from Selective Service names o fregistrants over 45 having dairy experience. The war boards will urge their return to dairy farms.

VII. Dairy workers who have gone into industry.

If these steps do not adequately relieve the situation county war boards will furnish to local Selective Service boards the names of experienced dairy workers who have left the farm to go into industry. They will be urged to return. It is not deemed wise that this be done at this time because within the last ten days there has been a back-to-the-farm movement due to the Tydings Amendment.

Chester Davis is giving priority to his organization of a land army. Mr. [Samuel] Zemuray, the president of United Fruit Company, is undertaking to supervise the securing of agricultural workers from the Bahamas and Jamaica. These English-speaking workers will help in the East where needed. Mr. Davis is not yet prepared to announce his plans, but in a business-like way will provide for bringing in Mexican workers in the Southwest, adn, most important, for the organization of a land army of college students, high school students and volunteer workers who have had some farm experience and can help harvest the crops this year.

who have experience as dairy work- help harvest the crops this year.

3,500,000 MORE IN SERVICES SEEN

Nation Must Supply That Many to Armed Forces This Year, McDermott Asserts

Colonel Arthur V. McDermott, irector of Selective Service for New York City, told 500 Brooklyn mployers yesterday that "the factories, the shipyards and the commercial enterprises of the nation" would have to furnish 3,500,000 able-bodied men this year to meet the requirements of the armed forces.

Speaking at a wartime conference on manpower sponsored by the Brooklyn Chamber of Commerce in the Hotel St. George, oClonel McDermott said that "the Army and the Navy cannot accept substitutes for able-bodied men," adding that "it therefore follows that industry and commerce must accept substitutes for the able-bodied men now in their employ, and I say 'must' advisedly."

He urged the employers, many of whom operate large war plants n the borough, to cooperate with draft officials in effecting "an orderly withdrawal and replacement of the men you msut surrender during the coming months."

"Without the slightest intention of criticism," he continued, "I think it can frankly be said that there have been not a few instances of lack of cooperation on the part of industry in the past. I do not believe that this lack of cooperation has been intentional in any great number of cases, but it is very evident that in innumerable cases there has been indifference, or carelessness, or a startling lack of knowledge of the regulations and the procedure for occupational deferments."

Colonel McDermott told the employers to familiarize themselves with the regulations and procedures for halting, at least temporarily, the induction of an irreplaceable man. He urged them to take a detailed inventory of the Selective Service status of every employe, and described such an inventory as essential to the proper conduct of a business.

Employers who assume that men classified in either 3-A or 3-B now will remain in that category for the duration Colonel McDermott asserted, are "simply living in a fool's paradise."

At a closed question and answer session in the afternoon, Richard C. Brockway, director for New York of the United States Employment Service of the War Manpower Commission, told the borough employers that on the basis of Selective Service estimates two out of every three able-bodied men between the ages of 18 and 38 would be called for service this year.

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Guides for Wartime Use of Women on Farms

U. S. DEPARTMENT OF LABOR
Women's Bureau, Special Bulletin No. 8

UNITED STATES DEPARTMENT OF LABOR
FRANCES PERKINS, SECRETARY

WOMEN'S BUREAU
MARY ANDERSON, DIRECTOR

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Guides for Wartime Use of Women on Farms

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Guides for Wartime Use of Women on Farms

The need for farm labor.

If the need of America's armed forces and the requirements of her allies are to be met, more food must be produced in the United States this year than ever before in history. Labor sufficient to sow and harvest the huge crop anticipated may not be available from the usual sources. Thousands of farm laborers have entered military service. Others are accepting employment in war industries because of their relatively higher wages. The shortage of automobile tires no doubt will reduce the supply of migratory workers who in normal times follow the crops from one agricultural area to another.

The use of women on farms.

The women of the Nation are eager to help in every possible way to win the war. The employment of women in manufacturing and in agriculture is nothing new. Since the outbreak of war the demand for women's services in the manufacturing of war equipment and munitions has greatly increased. Farmers also may find it necessary to use women in increasingly large numbers as the agricultural season develops. Farmers' wives and daughters will help in the fields to a greater extent than usual. Neighbors will exchange services more than is customarily the case, and women in nearby towns and villages doubtless will be available for short emergencies. In extreme emergencies the help of women from the cities may be needed to harvest the crops that will be necessary to win the war.

Principles to be observed.

Any plan for the increased use of women workers in the Nation's "food-for-victory" program should observe three main principles:

1. The recruiting of women for agricultural service should be done systematically and efficiently, and should be confined to those areas

in which a real need for women's services is anticipated. The agency best equipped to do the necessary recruiting is the United States Employment Service.

2. Only those women should be selected for work on farms who are able to make a substantial contribution to production. Physical fitness for the job, training, and experience should be the determining factors in selecting prospective workers.
3. Such working and living conditions as experience has proved are essential to maximum production and the maintenance of health should be provided. Under no circumstance should the use of women be permitted to lower existing standards of wages and working conditions.[1]

Recruiting Women Workers for Agricultural Employment

Use of women in local communities.

Recruiting of women for work on the farm should be limited as far as possible to those communities in which an anticipated shortage of farm labor has been definitely established. Farmers' requirements for additional workers are often sporadic, uncertain, depending on weather conditions, and for frequent but short periods of time. If the women needed for farm work can be secured from the immediate vicinity, the perplexing problems of transportation and housing can be reduced or entirely eliminated. In this period of national strain every effort should be made to avoid the creation of new problems in the efforts to solve existing difficulties. Therefore, only when a survey of the local supply of labor, including available women, shows such supply to be wholly inadequate, should the bringing in of women from remote areas be considered.

Determination of the need for women workers.

Two United States Government agencies—the Department of Agriculture and the Employment Service—are making systematic and continuous surveys to determine the local needs for farm labor. The farm placement division of the Employment Service, which has 1,500 full-time and 3,000 part-time offices, is especially concerned with securing estimates of the number of men and women who may be needed in each farm area. In every State and in every county in the United States there is an agricultural war board, made up of representatives of each agency of the Department of Agriculture. One of the purposes of these boards, known as the United States Department of Agriculture War Boards, is to see that coordinated action is taken to meet the farmers' need for labor.

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[1] The Children's Bureau, U. S. Department of Labor, has issued a statement of Policies on Recruitment of Young Workers for Wartime Agriculture.

No plan to organize women volunteers for farm work in any community should be undertaken until the local representatives of both these official agencies have been consulted concerning the need for women workers on local or neighboring farms. A great deal of wasteful effort may be avoided if this policy is closely adhered to. The recruiting of people for jobs that do not exist lowers morale and increases the difficulty of securing volunteers when the real need for their services does arise.

Recruiting.

When the necessity for recruiting women in certain areas has been determined by official agencies, the registration of women for farm work should be done under the direction of or in cooperation with State and local farm placement offices of the United States Employment Service. This policy is necessary if confusion and duplication in registration is to be avoided. Volunteers may be of assistance in this work, but their efforts should be channeled through Employment Service offices, which are experienced in the task of registering large numbers of job applicants. It is even more necessary that all classifications of registration, and referrals and placements, be made by the public employment offices.

Placement of women on farms.

As confusion in registration of women for farm work can be avoided if one central agency is utilized for registration, so speed and economy in supplying farmers with labor can be accomplished if placements are made through the farm placement offices established by the Employment Service for this purpose. These offices serve as clearing houses for farmers who need labor and workers who are available for farm employment.

Every woman who is willing and qualified to do the kind of work for which farmers will require help should apply for employment at the nearest farm placement office. As already stated, there are 1,500 full-time and 3,000 part-time offices of this kind in the country. Through a personal visit or a letter to one of these offices women can secure the information they require about opportunities for farm employment. Trained interviewers, who understand the requirements of each job and the amount of skill and experience necessary, will refer women applicants to the types of job for which they are best qualified. Thus much unnecessary personal interviewing of farmers and "shopping around" for appropriate work can be avoided by women willing to do farm work. Should there be no employment office in a given locality, information concerning the local need for farm labor can be secured from the county agricultural war board.

Physical examinations.

Much of the work for which farmers may need help doubtless will be heavy work, most of which probably will have to be performed under a hot sun. To avoid serious physical consequences of work for which some women may be unfitted, physical examination should be required of all women before placements are made. The experience of the United States and Great Britain during the first World War and Great Britain's experience in the present war confirm the wisdom of this policy. Not only would the farmer and the individual woman benefit by such a requirement, but groups of workers would be protected against the spread of illnesses and contagious diseases.

Standards of Employment of Women Workers

If the war is to be won, many unusual sacrifices will be required of the workers who make materials and equipment, as well as of men in the armed forces. Experience has taught, however, that if production is to be maintained, certain standards of employment must be observed. Conditions that undermine the health of workers, cause excessive labor turnover, or reduce morale tend to cut down production. At a time when labor is scarce, and many workers unaccustomed to the demands of the farm must be used to harvest the Nation's food supply, every effort should be made to increase production through the maintenance of those standards of work which experience has shown tend to increase output. The Employment Service can be of great assistance to a community by furnishing to farmers and workers information concerning wages and working conditions that have proved effective in stimulating production.

Hours.

Uncertain weather conditions that control much of the work of the farm make irregularity of hours frequent and often unavoidable. Nevertheless, in agriculture as in industry, long hours over a considerable period of time result in reduced production. This is especially true of repetitive and monotonous work, like planting, hoeing, and picking, that requires stooping or reaching—the kind of work for which women may be employed in agriculture in the largest numbers.

Eight hours a day and 48 hours a week have become the accepted standards for women in most occupations. On farms women should not be employed for longer hours except in emergencies, when the crop must be worked on immediately in order to prevent its loss. When emergencies require overtime for several days, compensating time off should be allowed during the same or the following week to assure full recuperation from the unusual physical strain.

Day of rest.

One day of rest in seven should be universally observed for all women engaged in agriculture. Science and experience have proved that one day off the job each week helps to keep the workers physically fit, with the result that output is increased.

Wages.

Because of their eagerness to serve their country, some women may be willing to work on farms during the war crisis for little or no pay. Though the motive is generous, the effects of such a practice would be wholly unsound socially.

Millions of men and women in peace times as well as in time of war must earn their living by working for wages on the Nation's farms. Many of these workers find existence at present wage levels exceedingly difficult. Should women offer to work for less, they would serve only to undercut existing rates and aggravate an already serious social problem.

In this country we do not have a National minimum-wage law, as Great Britain has, for farm workers. Some of the State minimum-wage laws for women permit the fixing of rates for women in agriculture, but thus far no wage order for this class of workers has been issued.

Voluntary wage standards, however, should be maintained for all farm workers. The Federal Fair Labor Standards Act serves as a guide as to what the minimum-wage standards for women in agriculture might be. Under the Federal law men and women employed in interstate industries must be paid at least 30 cents an hour. Most canneries, as well as other manufacturing establishments, are covered by this act. In many areas the same workers are employed alternately on the farms and in neighboring canneries. As the crops ripen, the workers follow them from fields to canning factories to help in their preserving. If farmers are to attract a sufficient number of workers to harvest this year's crops they must pay wages comparable to those that workers can get in canneries and other industries.

In communities in which fair wage standards are adopted by voluntary agreement, public employment offices can help by informing employers and workers of the recommended rates.

Transportation.

Transportation may be a serious problem in the effort to supply the farm with adequate labor this season. Even where the women who may be used on the farms can be secured from places no more remote than neighboring towns and villages, still some transportation will be necessary. In many cases farmers will be obliged to provide the means of getting women to and from their homes in order to secure their services. It is possible that in some communities school buses may be used to pick up the workers in the morning and to return them to their homes at night. Because of the shortage of rubber tires, transportation this year becomes an important condition of employment, which must be met if women are to be used to any extent on farms.

Housing.

Because of the transportation problem some farmers may prefer or find it necessary to employ workers who will be willing to live on the farms or in quarters that the neighborhood may be able to provide. This situation may create many perplexing questions concerning the maintenance of proper housing standards.

When only one or two women are employed, it may be possible to accommodate them in the farmer's own home. The problem becomes more serious, however, where larger numbers of women are required and living quarters must be provided for a relatively long time. Temporary buildings or tents may be provided by farmers; the dormitories of neighboring private schools or the facilities of consolidated schools may be utilized; or camps built from public funds may be a possibility.

Wherever housing is provided for groups of workers, certain minimum standards should be observed. Frequent inspection by the proper local authorities should be made to assure that wholesome and sanitary conditions prevail. Recommended minimum standards include the following:

a. Clean and sanitary living quarters, screened if possible.

b. Adequate and sanitary toilet facilities.

c. Shelters that are proof against rain and free from unwholesome dampness.

d. Pure water for drinking and bathing, tested and certified as safe by public health authorities.

e. Clean and comfortable beds. A single bed for each worker wherever possible.

Supervision.

If groups of young women should be employed on farms and required to live in camps or dormitories, proper supervision by qualified adult women should be provided in all cases.

Cooperation of Women's Organizations in the Solution of the Farm-Labor Problem

Many women's organizations are eager to help in solving the pending farm-labor shortage and have offered their services to State and Federal agencies. Some groups have indicated that their members will themselves be willing to work on farms if the crisis becomes so acute as to make this necessary. Organized women probably can render the greatest assistance to the "food-for-victory" drive by helping to put into operation the program outlined in the first part of this pamphlet.

Close cooperation with local farm placement offices of the Employment Service and agricultural war boards will enable women's organizations to determine how they can best serve in this emergency and whether or not a farm-labor problem actually exists in their communities.

Help in recruiting.

If women are to be needed to work on neighboring farms, local women's organizations can be of help in recruiting women for this work. They can arrange for meetings at which representatives of the Employment Service offices can explain the farm program as it relates to women. Announcements prepared by the Employment Service can be carried in club periodicals. If in some localities the necessity becomes urgent, many women doubtless would be willing to participate in a house-to-house canvass or telephone campaign to inform women of the need for their services and to urge them to register at the nearest public employment office.

Training.

In some communities labor may be needed for types of farm work for which few women are qualified at present either by experience or training. If men and boys are not available for these jobs, it may become necessary to train women in order to provide an adequate supply of workers. In communities where this necessity arises, representatives of women's organizations in cooperation with other groups can arrange for the establishment of short training courses. State and local agricultural schools and colleges may be able to provide the necessary instruction if the need for such training is effectively presented to them by representative citizens of the community.

Doctor's certificate.

Because there is no legal regulation limiting the employment of women in agriculture to those who can pass an appropriate physical examination, the establishment of such a standard necessarily must be voluntary. Women's organizations will recognize more readily than some other groups the importance of safeguarding the health of women workers. The responsibility for persuading the proper authorities in the community to adopt reasonable safeguards to health should be assumed by women's organizations. In communities where free clinics have not been established, women may be able to arrange with local physicians to give physical examinations without charge to those women applicants for farm work who can not afford to pay for them.

Labor standards.

State and local committees of farmers, workers, and representatives of the public may work out together the standard wage rates that should be paid to farm laborers and the length of the basic workday and week in the respective communities. Either as members of these committees or as advisers to them, representatives of women's organizations can exert great influence in securing the establishment and maintenance of proper working conditions for women.

Transportation.

In communities where a serious labor shortage may be accentuated by a shortage of transportation facilities, members of women's organizations can be of material help. Many women may be willing to use their own cars to transport workers to and from farms on which they are employed. The entire neighborhood could be canvassed by women and a corps of volunteer motorists willing to furnish transportation in emergencies could be organized. Even where school buses may provide adequate transportation, arrangements must be made with local authorities for their use. Responsibility for arranging for this means of transportation could be taken by women's organizations.

Housing.

In the matter of housing, women's organizations have a grave responsibility. It is of the utmost importance that the women and young people who respond to the country's urgent call for help in harvesting the Nation's crops be furnished suitable places in which to live. Not only must the living quarters be sanitary and comfortable, but a wholesome social atmosphere must be assured.

If women in the farm communities would open their homes to the young workers and the women who come into their neighborhood to do farm work, they would render a most patriotic service. Many of these new workers may be leaving their own homes for the first time and entering an environment with which they are entirely unfamiliar. The success with which they adjust to the new jobs will depend not alone on the conditions under which they work but very largely on the conditions under which they live. The friendly atmosphere of a private home to which workers could return from work in the evening would help them make the necessary adjustment. Women with a sympathetic understanding of the problem could without doubt persuade many householders in the neighborhood to offer temporary homes to newcomers working on nearby farms.

In some cases an uninhabited house, subjected to a thorough cleaning and provided with a few simple furnishings through the cooperative efforts of the women of the community, might be the answer to the local housing problem.

Where the resources of the community fail to yield any adequate solution for the problem of sheltering nonresident farm laborers, outside assistance may be necessary. The Farm Security Administration of the United States Department of Agriculture has had much experience in building farm-labor camps throughout the country. Public money allocated for this purpose is extremely limited, and the demands for Farm Security labor camps by the local communities are many.

However, where an urgent need for such assistance actually exists, and the community decides to ask for Federal aid, women's organizations in cooperation with other civic groups may succeed in securing the desired housing project.

Groups of young people living together in dormitories or camps must have the protection of intelligent supervision. Members of women's organizations who have had broad experience with young people would make welcome volunteers in many farm communities this summer. Mothers whose children are grown, teachers or camp counselors who are willing to forego part of their summer vacations in order to help with the "food-for-victory" program, would make excellent housemothers or supervisors in farm-labor camps where young people may be housed. Women's groups which could provide capable women willing to assume these duties would be making a real contribution.

Inspection of camps and hostels to assure that the general welfare of women and young people living in them is properly protected must in most communities be the responsibility of volunteers. Few if any States provide for public supervision of this kind. Again women's organizations doubtless will be called on to provide personnel or furnish advice concerning standards of supervision.

Community cooperation.

In areas where substantial numbers of women must be employed to meet the farm-labor shortage, careful community planning will be necessary in order that women may be employed most efficiently. Local agricultural war boards probably will be responsible for surveying the needs and resources of a locality and for securing the cooperation of women's and other civic groups in carrying out a constructive program. Committees on housing, transportation, or training may be necessary, or individual organizations may be asked to assume responsibility for putting into effect certain phases of the farm-labor program. Overlapping and duplication of effort can be avoided, and greater efficiency in solving the farm-labor problem may be attained, if each community organizes its resources and systematically allocates the tasks that must be done.

○

Research Department Report

OCCUPATIONAL INFORMATION

SCIENCE RESEARCH ASSOCIATES • 1700 PRAIRIE AVENUE CHICAGO

REPORT TO: The Book Review Editor

FROM: Thomas F. Carson, Jr.
Managing Editor, The Vocational Guide

SUBJECT: Careers in Forestry

Last spring more than 1,200 graduates of forestry schools in all parts of the nation marched out to work in a field new as a profession and as a science - forestry. They went to find jobs with the federal government, with other governmental units, with private individuals, with large corporations.

Trained foresters are engaged in several kinds of work - research in forest growth and management, research in forest wildlife, research in the use of forest products, teaching, public relations, technology, and in the supervision of untrained forest workers.

These men without training in the forestry profession are doing such work as patrol duty, manning forest lookout stations, marking timber, fighting fire, building trails and roads, tree harvesting, naval stores work, logging and lumbering, and so on.

As for trends, earnings are good for trained men.n Forestry is a field which slowly but steadily is growing. The consumption of lumber is increasing, and research is finding new uses for forest products.

Because of the importance of forestry and conservation to our national economy this monograph has a message for all Americans. But especially for American youth does it have value - in its analysis of the occupational facts and trends in a new world of work.

CAREERS
IN
FORESTRY

By

Charles N. Elliott

Former Conservation Commissioner

of Georgia

SCIENCE RESEARCH
ASSOCIATES

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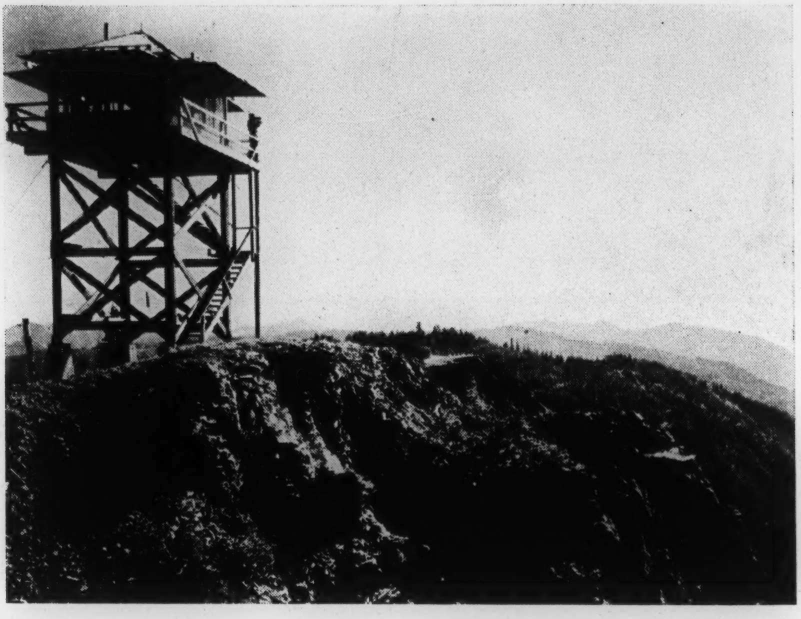

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FOREWORD

Forestry is a profession which has sprung from our efforts to halt a tragedy—the stupid waste of our great wealth of timber, game, and soil. The story of that waste is long and unpleasant. But the story of the forestry profession, though short, gives promise of an effort that is well on the way toward rescuing and protecting our natural resources.

The forester is no longer a "crack-pot" crusader. The value of his work is recognized. He has behind him the power of our governments—federal, state, and local. Private lumber companies, too, are waking up to the practical value of proper forest management.

Forestry is in some ways a strange profession. Its workers are scientists who must also be manual laborers. They are business executives who must also have an understanding of values which do not show up on this year's profit and loss statements. They are firemen, ready to sprint at a moment's notice toward the first faint traces of smoke, yet much of their work is done with the thought in mind of what may happen 10 or 50 years from now.

Great numbers of young people have already awakened to the opportunities in this profession. In fact, it is probably true that the great boom in forestry jobs is over. Stiff competition now awaits the graduates of our forestry schools.

Yet the picture is by no means gloomy. Employment of forestry workers still increases. There is no reason to expect this increase to stop, even though it may slow down somewhat. And the profession offers rewards that, to many young men, are well worth the risks of competition for the jobs.

Chapter I

CAREERS IN FORESTRY

TO ALMOST every American boy and girl the forest ranger, with his broad-brimmed hat and forest green uniform, is a romantic figure. His life is clean and simple and close to the heart of the wilderness. The vast national forests in which he works, with their virgin hills and valleys, their clean, swift streams, their picturesque roads and trails, have an appeal to the youth of any land.

There is, perhaps, something in all of us which sometimes yearns for the more primitive way of life. Many of us never have an opportunity to satisfy that longing, so we take it out in wishful thinking, dreaming of days on horseback high on some mountain ridge, or of hunting or fishing in the deep blue eddies of the streams in one of Uncle Sam's national forests.

The forester's life seems almost perfect to many people. But we must not forget that the forester works long and hard at a difficult and most important job. It is with the work, not the romance of forestry, that this book is concerned.

Last spring more than 1,200 graduates of forestry schools in all parts of the nation marched away from their graduation exercises—marched out to face the world of work which they had chosen as their own. Theirs is a new profession, the profession of forestry. But if forestry is new as a profession and a science, the story of the effect forests have had on mankind is as old as the story of the human race itself.

Before man learned to use the trees, he had learned to consider them in making his plans. The dense forests of ancient Europe were barriers between peoples and nations. In the deep woods were wild animals and other dangers, both real and imaginary. Civilization flowed around the forests seeking open lands, and primitive man settled in the more open spaces of the earth's surface.

Boundaries between tribes, laid out in the dawn of civilization, were the tangled forests. Many of those old tribal boundaries are still the boundaries of today's civilized nations. Today, there still remain vast wilderness areas, unbroken forests which man, with all his newly-gained knowledge and machines, has not yet conquered.

The tools of early man were too crude and weak for the job of clearing land or turning trees into products to serve human needs. Even the Romans, conquerors though they were, could not master the densely forested lands of central Europe.

Forest Paths of Progress

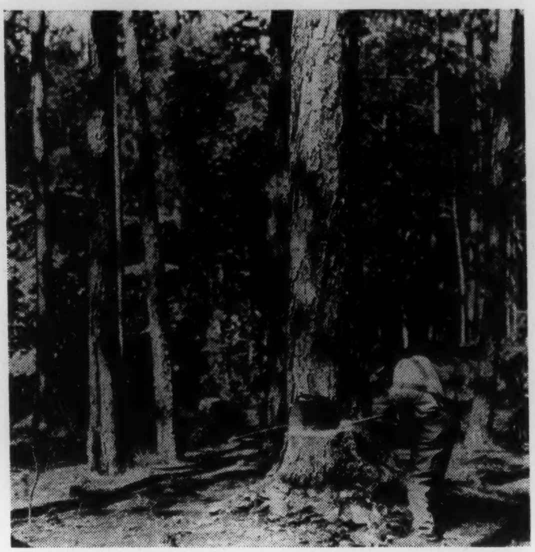
Today the picture is completely changed. Trees no longer hinder man's march of progress. They are, instead, part of the wealth of any group of people or nation. Man has learned how to use the forests wisely. Trees and products from trees are both necessities and luxuries to us all.

This change took place gradually over many hundreds of years. We went through the growing pains of waste and destruction. The ancient forests of the earth covered a large portion of the land surface outside the polar regions. Man, in his conquest of all earth creatures, has reduced the total forest area to about 7,500,000,000 acres, or 22 per cent of the earth's land surface. Of this total forest area, 5,500,000,000 acres are said to be in productive forest land today.

The early days of America saw much exploitation of the forests. The supply of wood and other products from the forests of North America was considered unlimited. Early settlers did not try to save timber, nor did they consider the future.

The first settlers to arrive on this continent were actually handicapped because of the trees. They had to fight back the wilderness to gain a foothold in this new land. Trees were always sprouting in the gardens and little patches they had cleared. To clear more land for cultivation in their fight against the forest, settlers would invite their friends and neighbors to a "log rolling" where huge timbers, worth a fortune today, would be cut, piled into heaps, and burned.

Out of this practice grew two industries of early America, the making of charcoal and of potash. As the industrial demand for ashes grew they became an important item of commerce, and the production of ashes developed into a regular business. Huge oak trees, hickories, elms, and other valuable timber which today would have great value as lumber, veneer, and interior finish were cut and burned for the potash market.



Felling Trees Has Progressed From A Haphazard Task To An Exact Science

One of the first forestry rules of early America was made in the 1680's by William Penn. Though there was no such term as the "conservation of our natural resources" in his day, William Penn realized the need of conserving the trees. His regulation stated that when land was cleared, one acre in every five must be left in trees.

By 1828 the federal government had begun to take a hand in forestry. During that year President Adams set aside the island of Santa Rosa near Pensacola, Florida, as a preserve for oak timbers to fill the need of American shipbuilding.

In 1876, the Congress of the United States authorized the Department of Agriculture to appoint a forestry agent. Dr. Franklin Hough was named as the first federal forester of the nation. He was appointed, however, as an agent for the Department of Agriculture, although all forest lands were controlled by the Department of the Interior.

President Theodore Roosevelt gave American forestry its first real start as a profession. When he was elected President, the West was in its period of exploitation by the railroads, lumber companies, and individuals. Immense fortunes were being made almost overnight.

President Roosevelt, realizing that certain groups were grabbing and wasting the wealth of the country for their own personal gain, set aside large areas of national forest land in the West. By 1907, more than 100,000,000 acres of land had been declared timber preserves through the efforts of the President and his chief forester, Gifford Pinchot.

Conservation Is Born

One of the most dramatic stories in the history of American conservation covers the early years in the national forest program.

In 1907, certain western groups and individuals who were monopolizing the timber supply and becoming more and more wealthy at the expense of the nation used their influence to get an amendment added to the Department of Agriculture Appropriation Bill, to prohibit the setting aside of additional forest land in any of the six far western states.

For months the foresters in the field had been busy surveying new lands, making maps, and getting ready for this very tragedy. They rushed the maps and papers across the United States to the President. With the Agricultural Appropriation Bill and its amendment on his desk awaiting his signature, the President first signed the Proclamation which set aside national forest land in those six states, saving some 16,000,000 acres of forest land for the American people.

Those years marked the beginning of the real need for men to manage the timbered acres which had been preserved as an everlasting supply of wood and forest products for the citizens of the nation.

The forest has gradually come to be recognized as a crop, to be planted, grown, and harvested like other crops. It is an important crop, since the forest land in the United States totals more than 630,000,000 acres, which is almost one-third of the total area of the nation. More than a quarter of this forest land is in 163 national forests; less than a thirtieth is in state forests; about one acre out of every 200 is in the 1,500 community forests; and the rest is listed as commercial and private forest land.

We sometimes wonder how the work done by foresters can possibly affect the lives of average American citizens. Many of us have never stopped to realize that if all the forests were suddenly and completely wiped off the earth, there might be no generation after ours!

The forest is nature's cover over the earth, helping to hold the soil in place. Without the thick layer of decaying leaves, called "humus," to capture rain, the land would soon dry out and become a barren desert. This layer of humus acts as a kind of sponge when rain falls upon it. The water soaks into it and leaks out gradually to feed the springs, creeks, and lakes of the nation. Without this soft forest floor to absorb them, the waters would rush headlong down the hills, washing away the rich soils, robbing the land of fertility, and leaving the stream beds dry. No water, no crops, no food—only starvation and death would be left behind.

Where forest trees are scarce rainfall is slight. Water is taken out of the ground and passed into the air by the trees through the process of *transpiration.* When the clouds are heavy with moisture this water falls to earth again in life-giving rain. The areas of greatest rainfall on the earth's surface are the areas which are heavily forested.

Plant leaves purify the air we breathe. Carbon dioxide, leaving our lungs as poison, is taken in by leaves and used in the manufacture of plant food. Waste material from the plant is oxygen, without which human beings and other animal life can't survive. Without plants all life would soon vanish from the earth, because the oxygen in the air would soon be turned into carbon dioxide.

New Trees Are Planted In the Ashes of Old Fires

Man uses the forests in a thousand other different ways. Four-fifths of all our houses are constructed of wood. Four hundred and twenty thousand miles of railroad tracks in the United States are built on wooden crossties. These crossties must be replaced at the rate of 50,000 each year. Telephone and telegraph wires in the nation, 90,000,000 miles of them, are held up by wooden poles cut out of the forest. The fence posts used by American farmers and landowners must be replaced each year by 400,000,000 new ones.

The morning, afternoon, and weekly newspapers were part of a forest only a short time before you read the news in them. Wood is broken down into pulp and rolled into paper to feed the presses of the nation, to make the newspapers you and I purchase for a few cents a copy.

Paper is one of our most important products. Each year every citizen of this country uses more than 200 pounds of paper! Last year Americans used more than 15,000,000 tons of paper. One book, *Gone With the Wind,* alone required some 1,500 tons of book paper!

That portion of the tree which does not go into the making of your newspaper is perhaps woven into your tie or dress or socks. Rayon, one of the products made from wood fibre, is being produced in great quantities today. It is taking the place of ship loads of silk from the Orient. Wood fibre is also important in many different kinds of products such as cellophane, artificial leather, synthetic rubber, and plastic wood.

Fuel wood is another important product that man secures from the forest. More people on the earth warm themselves by wood fires than by any other type. The peasants of central Europe keep the forest floors picked clean of branches and twigs in their search for fuel wood. In the 300 years of American history, more than 13,000,000,000 cords of wood have been supplied to American homes.

What Forests Mean to National Life

The list of forest products is long. Your pencil made from cedar, the desk upon which you write, and even the paint on the desk, more than likely were once parts of trees. Your baseball bat, tennis racket, golf clubs—those are only a few other products of our timber country. The United States uses more than one-fourth of all the wood, in all its forms, used in the entire world. Articles manufactured by the forest products industries in this country have a yearly value of $3,000,000,000, not counting the 10,000,000 tons of pulpwood used each year.

The forest provides the homes and the food for wildlife. Man himself finds recreation and relaxation in the forest in hunting, fishing, and hiking over forest trails.

Thus the forest serves us in many, many ways which we never consider unless we stop to think about them.

Because of the close relationship of forests to the happiness of man, the forester's job is very important to both the life and progress of the human race. Mr. Average Citizen, who each year becomes more aware of the value of forests to him personally, is demanding greater protection and better management of his forests. As the part forests play in our daily lives becomes better understood, we will need more men who can bring our forested areas to their greatest usefulness.

Chapter II

CAREERS AND JUST JOBS

THERE are four types of organizations which use forest workers. These are the federal government, the state governments, local communities (including cities and counties), and private employers. The private employers may be single individuals, or they may be great corporations.

The work of any of these groups cannot be separated from that of the others. The federal agencies help public and private organizations which are set up for the protection and improvement of our forest lands. The states work with companies and individual landowners, helping them to adopt sound forestry principles and practices in order to get the greatest yield from their forest lands.

Forest Workers — Trained and Untrained

The men and women who work in the occupation of forestry can be divided into two groups: the *trained* and the *untrained.* Both types of workers are found in almost every organization which carries on forestry work and employs foresters.

The great majority of forest workers are in the untrained class. The jobs requiring training are usually held either by college graduates or by men who have worked their way up from field jobs. The types of work which go to trained men in most cases are:

1. Supervision of untrained workers in protection, restoration, and harvesting.
2. Use of wood through chemistry, architecture, and engineering.
3. Research related to growth and management of trees and to forest wildlife.
4. Teaching.
5. Public relations work.
6. Tree surgery.
7. Wood technology.
8. Others.

The field jobs, usually held by men without college training in the profession of forestry, or by trained men who are beginning at the bottom, include such work as *patrol duty, manning forest lookout sta-*

Parachute Jumpers Help Fight Fires

tions, marking timber, fighting forest fires, building trails and roads, many types of *tree harvesting, naval stores work, logging and lumbering, and others.*

Oddly enough, many of those persons who have jobs with the U. S. Forest Service, or who are supported either directly or indirectly by the national forests, are not trained foresters. In his 1939 report to the Secretary of the Department of Agriculture, former Chief F. A. Silcox listed 5,500 as the permanent staff of the Forest Service. Of this number fewer than 3,000 were trained in the profession of forestry.

Chief Silcox gave the following list of individuals who are *dependent* upon national forests for their livelihood:

5,500	permanent staff
11,000	temporary employees
13,500	WPA workers
50,000	CCC boys
13,000	loggers and lumbermen
25,000	riders and herders under permit

Based on these figures, only one out of every 39 men who work for or in connection with the U. S. Forest Service is technically trained.

This, however, does not hold true throughout the profession. Most jobs of teaching forestry—in fact all forestry educational agencies—require the services of men with college degrees in forestry. Research jobs, as well as positions with state forestry departments, are both likely to demand trained workers. Trained foresters are usually chosen to direct forestry work, while those who do not have the proper education and experience will be the field workers and helpers.

Mr. Henry Clepper, Executive Secretary of the Society of American Foresters, gives the following figures on the number of trained foresters in the United States with the jobs in which they are employed:

Federal (all government departments together with CCC, TVA, WPA and NETSA)	2,800
State Forestry	500
County and Municipal Forestry	100
Forestry Education (including extension)	350
Private Forestry (including associations)	600
Unclassified (includes graduate students, retired foresters, and those who have not indicated their fields of employment)	450
Allied fields (includes fields allied to forestry, such as teaching, selling, lumbering, nursery work, shade tree work, and public employment not directly of a forestry nature)	1,200
Non-forestry (includes unemployed, military service, and those trained as foresters who have careers definitely not in forestry)	3,000
Total	9,000

In addition, Mr. Clepper says, there are more than 6,000 students now registered in the forestry schools of the United States. In 1912 the United States had only about 500 men who had been trained in the profession of forestry.

Why Forestry Training?

The number of trained forestry workers in the United States today who are devoting themselves to the business of forestry is shown to be about 6,000. This may be compared with the 115,000 untrained men who work for or in connection with the U. S. Forest Service alone. This, of course, includes the 38,000 loggers, lumbermen, riders, and herders who are not direct employees of the Forest Service. Turpentine workers, loggers, lumbermen, pulpwood operators, and many others associated with private companies swell the numbers of those in forestry work without benefit of college training to a staggering total.

The figures on employment may seem to show that an education in forestry is hardly worthwhile. However, the picture is completely changed when we compare the salaries earned by trained and untrained forest workers. They show that the years and money spent in learning the profession of forestry pay tenfold dividends in the course of a forester's career.

Earnings Are Good for Trained Men

In the U. S. Forest Service, trained men hold the key positions. Regional foresters, heads of the regional divisions of the National Forest, receive salaries which range from $6,500 to $7,500 per year. Their assistants are paid from $5,600 to $6,400 for each year's work. The forest supervisor, who is chief of a national forest, receives a salary of from $3,800 to $5,400 a year and his assistant is paid from $3,200 to $3,800. The forest ranger, in charge of a ranger district in a national forest, makes from $166 to $218 per month. Length of service and quality of work may change his rating to senior forest ranger with a raise to as much as $250 per month.

Salaries of trained foresters in the other government bureaus are widely varied. Foresters for the Indian Service, National Park Service, Income Tax Unit of the U. S. Treasury, Fish and Wildlife Service,

Wildlife Workers Shipping Beavers To A New Home

Farm Security Administration, Bureau of Entomology and Plant Quarantine, CCC, TVA, Bureau of Plant Industry, and the U. S. Department of Agriculture receive salaries which range from $1,800 to $6,500 per year. The average of all the salaries runs from $200 to $250 per month.

About 150 members of the forestry profession are engaged in teaching at forestry schools. Salaries for these jobs range from $1,600 for new instructors up to $10,000 for heads of forestry schools. Many full-time professors draw from $3,000 to $5,000 a year for their services.

The salaries of state foresters usually range from $4,000 to $6,000, although this type of work may pay less or more than that sum. Newcomers to state forestry organizations usually receive a salary of from $125 to $166 per month.

Private forestry pays up to $10,000 per year, although the salary may go down as low as $1,000. The salaries of trained men working for private organizations are roughly the same as the salaries of men in work for the government.

Less Training — Less Money

Now let's take a look at the earnings of untrained men. In the U. S. Forest Service, untrained men hold the jobs on trail crews, road crews, and as lookout towermen, and other jobs of the same type. The salaries of men employed on this kind of work usually run around $50, $60, and $70 a month. Crew foremen may get up to $100 or $125. Few other government bureaus employ untrained men for forestry work alone.

The work of the ranger is wholesome and satisfying and out of doors. The value of the service rendered by the men in this line of work is as important as that of any public agency today.

Most forestry jobs are not routine. They furnish day-by-day problems which tax the worker's imagination and initiative. The forester's work often carries him into remote places. He is often shifted from place to place, and his work may change with each shift. He is unable to establish a home in the early years of his career, but he does have an opportunity for wide and varied experience.

In the next chapter we will see what the forest ranger does, how he meets his problems—and what a young man entering the field can expect among his daily tasks.

Chapter III

THE FOREST RANGER

THE FOREST ranger is usually pictured in his camp beside a lonely mountain stream, or on his horse high on some mountain ridge, enjoying hunting, fishing or hiking. These pictures give us a true enough idea of certain sides of the ranger's life. But they don't tell us much about his work. Let's turn now and take a look at the job—the heavy job—that the forest ranger has accepted.

The key men in the U. S. Forest Service are the district forest rangers. Each national forest is divided into districts, some of which may be as large as the State of Rhode Island. Each district ranger is assigned to one of these districts. All forestry activity in the section of the national forest to which the ranger is assigned comes under his supervision.

The ranger, however, is not a "lone wolf." He is a part of an organization. Above him are supervisors and technically trained men from the national and regional offices of the Forest Service. They help and advise him and check up on his work. Working under the ranger is a staff of assistants and field workers, who help him carry out his many duties. The men who work in his district are responsible to the ranger, just as the ranger is responsible to the regional and national offices.

Those who manage our forests say that the most important job any forester has is the protection of forests from fire. Fires destroy young and old timber and burn off the spongy humus which holds food and water for the trees. Fires kill game and in many other ways are very costly to us.

Because uncontrolled forest fires cause more than $50,000,000 damage to the citizens of the United States each year, elaborate fire protection systems have been installed in our national forests, our state forests, and in many of the large commercial forests.

Killing Fire Is a Science

In the typical district of a national forest, the system of protection against fire has three main goals: prevention, "presuppression," and actual suppression. These are long words, but their meanings are simple enough. *Prevention* is the work done to keep fires from starting. *Presuppression* work is that part of the fire-fighting job carried on between the time the fire breaks out and the time the fire-fighting crews reach the scene. *Suppression* is the actual fight against the fire, including the putting out of the flames and the attempts to limit their spread.

Prevention may be called education to do away with forest fires. Those who live in or near the national forests, as well as those who visit them are asked to help in the forest fire programs by means of personal contact, letters, folders, news stories, posters, and many other ways. The job of providing such information and of *selling the idea* of forest fire prevention requires the services of a *man who has had experience in public relations.*

The actual presuppression and suppression system of a national forest provides one of the dramatic jobs of a forest ranger. The part of this system designed to discover fires has often been called the ears and eyes of the forest. It is made up of lookout towers, telephone or radio units, fire trucks, tools, and skilled crews of men.

Lookout towers are erected at carefully chosen points throughout the ranger district, mostly on high spots of the forest, where the man assigned to the lookout station may keep watch over a large stretch of land. These lookout towers are usually made of steel, with tiny glass houses on top. A lookout man is assigned to each house during those seasons when fires are most likely to burn through the forests.

The lookout man keeps eternal watch over the hills and valleys for signs of smoke. On a table in his glass house he has a map of the forest and an instrument called an *alidade* to help him locate the exact position of each fire. With the alidade and the compass drawn on his map, he is able to give the exact direction of the fire from his station, but he must guess at the distance away from the lookout tower. He then reports his findings to the ranger station by telephone or, in some national forests, by radio.

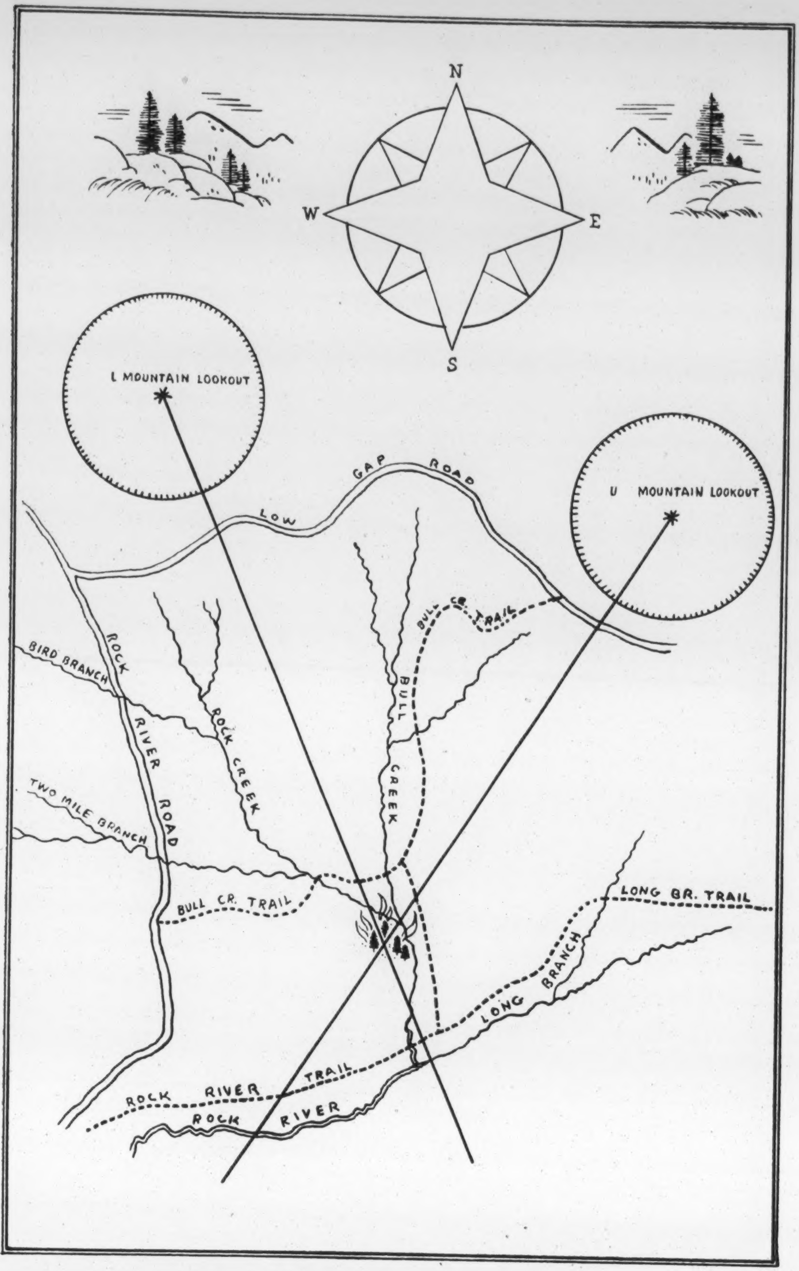
A Lookout Towerman Spots A Fire

The ranger station contacts other lookout towermen who are near enough to see the smoke. From these, also, compass readings are received. After two or more compass bearings have been secured, the ranger turns to his own men and plots the readings from the lookout points. Where the lines from these bearings cross is the exact location of the fire. This method of locating fires from two lookout stations is known as *triangulation*. Here's how it works:

"L" Mountain Lookout reported a fire. He could not be certain, however, whether it was burning north of Bull Creek Trail, at the junction of Long Branch with Rock River, or south of Rock River. So he gave a compass reading from his station, which was S 21° E.

The Ranger Station immediately contacted "U" Mountain Lookout and asked for a report. The "U" Mountain Lookout could not tell whether the smoke was northeast or southwest of the junction of Bull Creek and Rock Creek, but he gave a compass reading from his station —S 37° W.

The forest ranger who had a map like the one on the opposite page drew a line on the compass bearings from each station. Those lines


N
W
E
S
L MOUNTAIN LOOKOUT
U MOUNTAIN LOOKOUT
LOW
GAP
ROAD
BULL CR. TRAIL
ROCK RIVER ROAD
BIRD BRANCH
ROCK CREEK
BULL CREEK
TWO MILE BRANCH
BULL CR. TRAIL
LONG BR. TRAIL
LONG BRANCH
ROCK RIVER TRAIL
ROCK RIVER

Locating A Forest Fire By "Triangulation" crossed southwest of the junction of Bull Creek and Rock Creek. This crossing showed the location of the fire.

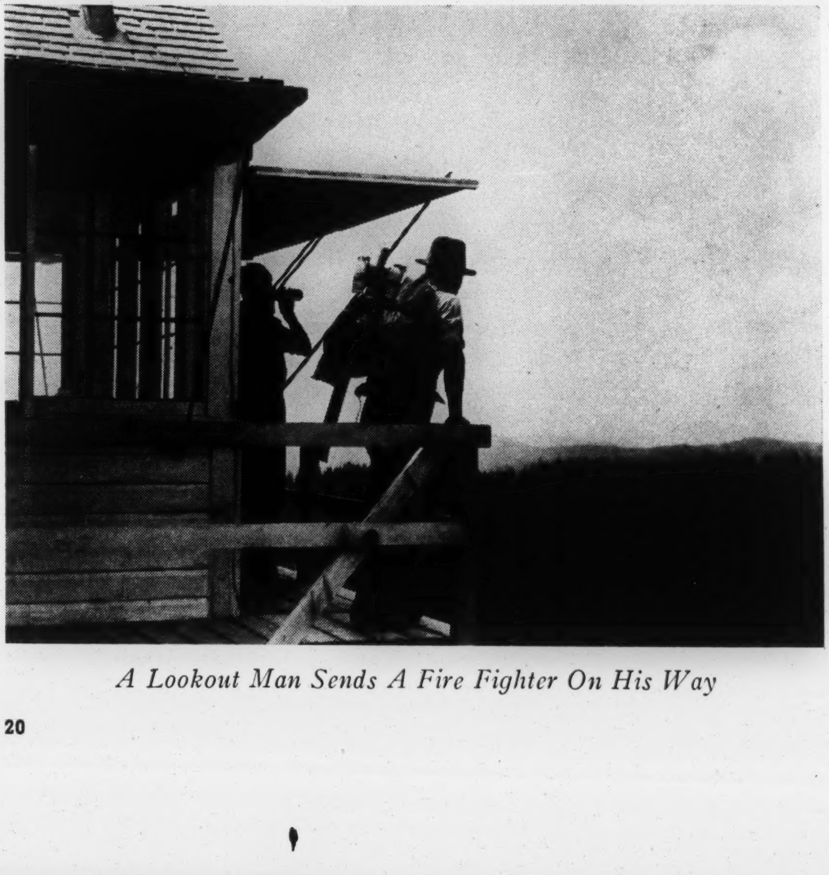
The ranger immediately sent a crew up the Rock River Road to Bull Creek Trail. The men walked over the Bull Creek Trail to the junction of Two Mile Branch and Rock Creek and down the west side to Rock Creek to the fire, which was put out before it could do any great damage.

Smoke Eaters in Action

Most forest systems have a roving fire truck which is equipped to put out all small fires. This truck goes by road to a point as near the fire as possible, and the men assigned to it carry the fire-fighting equipment the rest of the way on their backs.

If the fire cannot be controlled by this advance crew, more men are called into action. Road and trail crews, and men on nearby construction jobs, are rallied to the job of putting out the fire as quickly as possible. Sometimes a single fire will require weeks of effort before it is halted completely.

The ranger classifies all forest fires in types. The worst of these types is the *crown fire,* which sweeps with the speed of an express train



A Lookout Man Sends A Fire Fighter On His Way through the tops of the trees, burning everything as it goes, destroying thousands of dollars' worth of timber in a very short time, killing game and threatening the lives of men. This is one of the most difficult of all fires to control and must sometimes be fought with a *backfire,* set from the edge of a natural barrier against the wind and allowed to burn until it meets the main fire. Both fires then die out deep inside the fire line.

Different Fires — Different Methods

The most usual type of fire is the *surface fire,* which burns on the ground, lapping up the leaves or needles, destroying humus on the forest floor, eating into the sound wood of the trees, killing small seedlings, and in many other ways damaging the forest. This fire may be beaten out with wet sacks, tree limbs or special fire flaps if it is not too hot. If the flames are leaping several feet above the ground and the fire fighters are unable to approach them, a *firebreak* or clearing is made in unburned forest outside the fire line and the fire allowed to burn to the break where it dies out for lack of fuel.

The most baffling fire is the *ground fire,* which burns under the surface in leaves and moss and peat. This type of fire will creep along slowly with hardly any sign of smoke and then will burst into the open where it is least expected. It might burn for days underground and then suddenly appear again as a surface fire. Sometimes it will appear after heavy rain has put out all other visible fire. This kind of fire must be fought by digging a trench to mineral soil and wetting both sides of the trench.

Rangers Must Be Part Firemen

To fight a fire successfully, the forest ranger must be both trained and experienced. He must know, for instance, that when fires burn uphill they create their own draft and are much hotter than when they burn downhill. He must know when a fire is likely to "crown." He must watch for sudden shifts of wind which might place his men in danger. He must know when and where to establish fire camps for his men, and what supplies and equipment they will need. He must know when it is safe to pull his men off the fire line.

To help individuals and states with their forest fire problems, the Congress of the United States passed the Clarke-McNary Law in 1924. This law provides sums of money to match funds spent by states and private landowners for forest fire control. The money is used for towers, firebreaks, telephone systems, new equipment, and for all purposes except actual suppression of fires.

More and more organizations are being formed to cooperate with the federal government. County governments are placing their entire counties under forest-fire-fighting systems. Many landowners are forming fire-prevention associations. More men are needed each year, and many foresters today are finding their way into this type of work.

What Does a Ranger Do?

Although fire control is probably the most important job a forest ranger has, he is responsible for many other types of work in the national forest. One of these is the building of roads and trails to make it easy to reach all portions of his district. With the help of technical experts, he must plan, construct, and maintain the road and trail system in his district of the national forest.

These roads and trails are not mere haphazard lanes of travel wandering aimlessly through the woods. The main roads, truck trails, and footpaths have a definite purpose in the forest plan. They may be planned as firebreaks, dividing the forest into units to check the progress of forest fires, or as highways into and through the forest, to be used by the public. They often lead to public camp sites or other recreational centers, and they may be used for patrolling the forest to watch for fires, illegal hunters, trappers or fishermen.

Forest roads must be planned with thought for both usefulness and low building costs. They must have proper drainage, be surfaced properly, and follow correct grades through country which is not too hard to reach. Engineers work with the rangers in planning and building these road systems, but the first responsibility belongs to the rangers and to the crews working directly under them. Formerly the road and trail crews of the national forests, which acted as emergency fire-fighting units, were temporary gangs, working only during those months when forest fires were likely to occur. Today, most of these crews have been replaced by CCC workers.

Forests Need Supervision

Under the forest ranger's supervision, tracts of full-grown timber are selected for sale. These tracts must be surveyed and rules made for the harvesting of the trees. The sale is made to the highest bidder. Those trees selected must be marked and then cut in the ways approved by modern principles of logging.

The ranger must know how to determine the amount of lumber in a given tract. Standing timber is usually estimated in *board feet*. A board foot is one foot square and one inch thick. The way this estimate is made is described in Chapter IV in the section on *timber cruisers*.

Sometimes the advance estimate (or cruise) is not made. Then the ranger must be on hand to measure all logs cut and figure out the number of total board feet taken from the area.

After the selection of site, timber cruise, and choice of the company to which the sale will be made, a contract is drawn up between the Forest Service and the company. This contract contains a few simple rules of good logging such as the sizes of trees to be cut, stump heights, cleanup after logging, prevention of forest fires, and others. The ranger's job is to see that these rules are enforced.

Rangers Are Forest Watchdogs

The rules of good logging apply not only to the Forest Service but to other agencies as well, whether they be public or private. Although these rules are less generally followed outside the public agencies and the large commercial companies, they are becoming recognized as important, and more companies are employing foresters for the purpose of seeing that sound logging and lumber practices are followed. For this reason, new jobs for foresters are opened each year.

Private agencies own three-fourths of all the timberland in the United States, and 95 per cent of all timber is cut on private land. The need for more experienced and trained men is clear, since some 425,000,000 acres of commercial and farm forest land in the United States support, either directly or indirectly, about one-tenth of our entire population.

Another important job of the forester is the production of tree seedlings for reforesting treeless areas. During 1939, 41 states produced and distributed at cost to farmers and landowners 55,359,700 tiny trees for planting. That same year public agencies planted more than 160,000,000 trees.

Baby Fish Are Planted By Plane In A Far-Away Bay

This huge job required a great number of workers. Men were needed to collect the seeds, prepare, plant, and care for the seed beds, and to plant the seedlings where they were most badly needed. The forest ranger must know how to collect seeds, what types of trees to plant, where to plant them, and how to care for them.

They Protect Our Wildlife

Wildlife management is another job of the forest ranger. In many national forests certain lands have been set aside as "wildlife management areas." Those lands are managed primarily for the best interests of the wildlife native to the area. One forest may devote its lands to deer, bears, turkeys, grouse, and squirrels, while a national refuge on the other side of the United States may be used primarily for mountain sheep and grizzly bears. Many times, after the wildlife management area has been well developed, it is opened to limited hunting, and the surplus game is taken by sportsmen. Thus the game animals, birds, and fish are "harvested" in much the same manner as forest trees.

U.S. DEPARTMENT OF AGRICULTURE
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U S
ENTERING
CHEQUAMEGON
NATIONAL FOREST

This White-Tailed Deer Might Have Perished In the Snow — Were It Not For the Forest Ranger

Often the lands set aside as refuge for wildlife have been drained of their stock. Then animals, birds, and fish must be trapped from some adjoining area where they are plentiful or must be raised in hatcheries for release on the management area. There they are carefully guarded from poachers. The wise forest ranger knows, of course, that the killer animals and birds should not be wiped out entirely, or the balance of nature will be upset with bad results. He must know just how far he can go toward control of the "varmints" on his area.

Big Game Is on the Increase

Every year a survey is made of the big game animals of the national forests. These surveys fall largely upon the shoulders of the forest ranger who, with the help of a wildlife expert and his assistants, makes a count of all big game. The surveys have showed that under proper management the number of game animals has increased greatly during the past twenty years. Since 1924 the big game animals in the national forests of America have increased in number by more than 170 per cent. Today the national forests contain about 1,842,000 big game animals—more than 30 per cent of those in the nation.

Fish and small game have increased at about the same pace. The rangers and technical men assigned to game production and management realize that if plenty of food, cover, and protection are provided for game birds, animals, and fish, the game will increase.

Other duties, such as the development and maintenance of recreation centers, flood and erosion control, the lease and control of grazing rights, and many similar jobs are placed on the forest ranger.

This chapter has dealt with the U. S. Forest Service ranger. He was chosen because his is the *standard* job for the professional forester. He is neither a top-ranking executive nor an unskilled worker. Rather, he is a trained forest man who may have had years of experience or who may have recently graduated from a forestry college course.

Requirements: Brains, Muscles, Courage, Faith

The Forest Service is not the only employer of rangers. The national parks have large ranger staffs. Rangers are also found in some community forests. The nature of their work varies with the type of forest they work in, the uses to which it is put, and the part of the country in which it is located. There are rangers in the northern Rockies who spend months of each winter completely cut off from the world by deep snow. There are others who work within sight of large cities such as Chicago.

Though the ranger may have his quiet hours beside the mountain stream, or high on the wind-swept ridges, he has a heavy load of work to carry. He is far more likely to be found, sooty and sweaty, fighting a stubborn forest fire, or watching carefully over the welfare of tender, newly-planted trees, or sitting at his desk making plans and conducting business dealings. He is, in a very real sense, the ruler of a forest territory, responsible for the welfare of the territory, its people, its trees, its soil, and its game. The job calls for brains, muscles, courage, and a faith in the importance of the job at hand.

This Ranger Travels On Skis

Chapter IV

OTHER FORESTRY JOBS

FORESTRY is a great profession with many branches. The work of protecting and improving our national wealth of timber calls for many men in many different types of work. This chapter will discuss some of the professional men who share the responsibilities of the ranger.

First let's look at the jobs in the Forest Service itself. We have already mentioned that the ranger has many assistants. Most of these are untrained men who do the routine or heavy labor. They build trails, fight fires, police the forests. They are usually natives of the district, good practical woodsmen, with little education.

Different Men for Different Jobs

But there are some jobs in the Forest Service which can be considered as apprenticeships for a district ranger's job. Today most Forest Service men start their careers by passing civil service examinations for the positions of *junior forester* or *junior range examiner*. To take these examinations, the applicants must have completed a four-year college course in forestry.

The junior forester may work with a ranger or do field research work under the direction of other Forest Service officers. He helps make surveys, supervises workmen, estimates timber, and generally makes himself useful.

The junior range examiner is more concerned with problems of grazing and forage crops. A great deal of grazing is permitted in our national forests, and the range examiner helps direct this work, seeing to it that the livestock is given the best opportunities for forage without damaging the forest.

Generally speaking, the beginner in forestry may expect to spend at least two years at a junior job before securing a promotion to the post of district ranger.

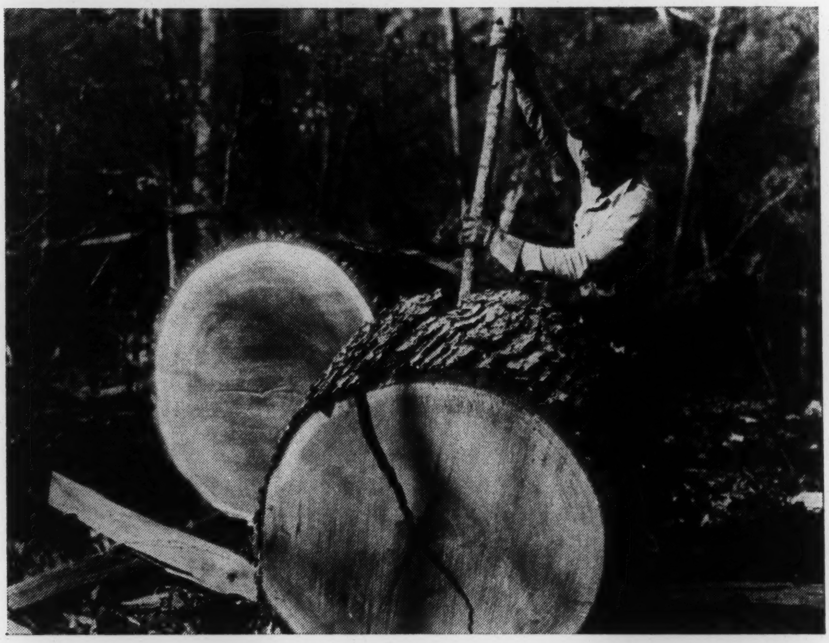
Some junior range examiners are promoted to higher positions in range work, such as assistant range examiner or range examiner. These jobs, as their names suggest, are simply higher positions within the same field as the junior range examiner's.

Forestry work, like other professions, has need for many types of specialists. The district ranger might be called the general forester, just as the "family doctor" is the general worker in medicine. Where medicine has specialists in such fields as nose and throat, the forestry profession has what are known as "technicians."

Technical assistants are young foresters starting in specialized work. If they work as assistants to district rangers they are likely to be specialists in such fields as fire control, road and trail building, timber culture and so on. Staff technicians, who are higher up the job scale than technical assistants, may work directly under higher officers of the Forest Service. Their specialties include fire control, watershed protection, flood and erosion control, timber plans and sales, wildlife, recreation, and others.

Certain types of experts are hired through special civil service examinations. These include *lumbermen, land examiners, chemical engineers,* and *wood experts.*

Like other government departments, the Forest Service has a large number of men whose jobs are to supervise and direct those under them. There are district, regional, and national positions of this sort, and many assistantships. The policy of the Forest Service is to fill these positions by promotions from other jobs within the organization.



This Lumber Worker Is Supervised By A Ranger

A type of forest job gaining importance as the years go by is that of the *research forester.* Forest experiment stations have been established in many points. The research jobs, outlined in 1939 by the chief forester of the U. S. Forest Service, deal with:

1. *Uses of forest land and methods of growing timber.* These require knowledge of climates, which vary from arctic to tropical, knowledge of effects of climate and wide ranges of soil and topography on several hundreds of tree species occurring in an endless variety of combinations, and knowledge of such things as planting and fire protection.
2. *Methods of cutting and removing forest-land crops* with the least waste and damage, on a basis of permanent production.
3. *Methods of processing and using raw wood* and its products and by-products. This includes knowledge of strength and other physical, mechanical, and chemical properties of wood; of present and possible markets, particularly with respect to large volumes of low-grade material now being produced; of new uses for woods now used and those not now used; of how lumber and other forest products may best be manufactured and processed.
4. *Economic aspects of managing forest land,* of harvesting its resources, and of manufacturing and processing, distributing, and using them. This includes forest taxation, tax delinquency, forest fire insurance, stumpage, log and lumber prices, where our forests are, how fast they are being cut down, how fast they are growing, how fast they can be expected to grow, and present and probable future needs for forest products.
5. *Forest influences.* The effect of forest land and its trees and plants on water resources. Effect of use of forests, forage, and wildlife, and of recreation on each other and on industry, agriculture, and local and national welfare.

Research Work Calls for College Training

Forest Service research concerning such things as prices, costs, and uses of forest products has been of direct value to makers, distributors, and users of forest products. Research in fire protection and forest management helps solve problems that are vital to private and public forest owners generally. Results are given to private and government agencies alike.

The wood-using companies also employ technologists, wood chemists, and a variety of research workers. Most of those employed in research work are college-trained men and women who devote themselves to the problems of wood and its uses. Their work has showed us how to use wood in making movie films, alcohol, paints, toothpaste tubes, combs, sausage skins, linoleum, telephone receivers, and many other products.

To the *state forester* and his staff of men fall the thankless jobs of helping the large and small landowners protect their forests from fire, of providing tree seedlings at cost for the purpose of restocking cut-over lands, of establishing and maintaining typical forest areas as demonstrations that forestry can be made to pay dividends, and of educating the man on the street in the value of forests to him, personally. The fact that two-thirds of our forest lands are privately owned makes this job tremendously important.

The state forester's organization must help to bring together the private citizen of the state and the various forestry and other conservation agencies of the federal government. For instance, all Clarke-McNary funds allotted by the U. S. Forest Service to the various states for forest fire prevention, must pass through the state forestry organizations for approval and check-up. They also help in all cooperative activity for forest fire control.

One type of forestry job which has demanded a large number of workers during the past seven years is that of *CCC work foremen* in forestry camps. The workers who hold these jobs are usually able, well-trained men. They must be able to adapt themselves to all types of work and to handle men. Since its organization in 1933, the CCC has taken much of the load off the district forest rangers' offices by fighting forest fires, constructing roads and trails, planting trees, restocking game birds, animals, and fish, thinning and improvement cutting, and in many other ways. The forester assigned to a CCC camp must know how to do all those things and many more. Many of the CCC foresters go into federal or state work after their CCC camp assignments.

"Here's Your Fire Equipment, Men. Go To It!"

Extension foresters form another group which has come into being during the past few years. The extension forester must have wide training and experience in order to make a success of his job. He works with county agents, contacting farmers and landowners, and helping them solve their forestry problems from the growing and planting of seedlings to the harvesting of mature timber. He is the contact man of his state, selling forestry and good forestry practice to large numbers of people.

One type of technical man employed by the federal government and by many of the states and private companies which deal with forestry is the *silviculturist.* A silviculturist is the technical manager of a forest. He studies the markets and the supply for those markets. He decides what trees can be most profitably grown on the different types of land. He must know how to manage forests efficiently to produce the best results. In short, he must make the forest pay in dollars and cents.

He Mixes Forestry with Business

Given a 10,000-acre tract as an area to manage, a silviculturist would first determine the kinds of trees to be grown and the purpose for which those trees would be used. Then he would install the best methods to meet those needs.

Suppose he wished to grow pine timber for lumber. The pine selected matures at fifty years of age. With this in mind he might divide the 10,000-acre tract into 50 lots of 200 acres each. Each year, if conditions were favorable, he would plan to harvest 200 acres of timber and then plant that 200 acres back with young trees, so that by the time the last 200-acre tract had been cut the first 200 acres would be ripe with trees 50 years old and ready to harvest again. By this practice, he would insure a never-ending supply of timber trees 50 years old.

On the other hand, if this 10,000-acre tract was better suited to pulpwood which could be harvested each 10 years, the 10,000-acre tract could be divided up into ten 1,000-acre tracts and 1,000 acres harvested each year. This would insure an endless supply of pulpwood from the tract.

This example, of course, is based on "clear cutting" methods of harvesting timber. The forest may be established already and on land so steep that clear cutting would be impossible. Then the silviculturist must harvest the forest by a "selection," or "partial cutting" system. In order to do this he must know that the forest contains four *types* of trees. These are classified as *dominant,* or the tallest, largest trees in the forest with crowns spread out to catch most of the sunlight;

co-dominant, or trees second to the dominant, with crowns to take up a large portion of the sunlight; *intermediate,* much smaller trees with crowns just barely reaching up into the crown niches of the forest; and *suppressed,* those trees growing down under the main forest crown and which will, eventually, die or be stunted for lack of sunlight.

If the forest is mature, the dominant and co-dominant trees will probably be removed for lumber. If the forest is a growing unit, not yet mature, then all the suppressed and many of the intermediate trees will be taken out for posts, poles, cordwood, and for other purposes to give the largest trees more room to grow into valuable lumber.

Whatever cutting is done depends entirely upon the type of forest, its location, and the use to which the trees will eventually be put. Forests managed in this way are said to be under *intensive management.* Suppressed and intermediate trees taken out of the forest to improve the quality of the stand are said to be *thinnings* or *improvement cuttings.* When dominant and co-dominant trees are taken out of the forest this way, the method is said to be a *selective* system of logging.

Foresters estimate that some 350,000,000,000 board feet of lumber are now produced in the world each year. The experts say that if proper methods were employed to produce trees on a scientific management basis, more than 10 times as much could be produced.

In order to learn the number of board feet in a certain tract of land, the timber must be *cruised.* This means that all trees on a certain percentage of the tract must be measured, the total number of board feet determined for all trees measured, and then this percentage applied to the whole area.

Turning Trees Into Money

The *timber cruiser* measures only the *diameter* and the *merchantable height* of the tree. The merchantable height is that part of the tree which can be cut into lumber. After those two figures are obtained they may be converted into board measure.

Cruising is usually done by the *strip* method. Strips typical of the area to be cruised are laid out on a map and all trees in those strips are measured.

The diameters and heights of all trees measured are kept on a *tally sheet.* After the final survey or cruise is made, the tallies are changed into board feet through use of volume tables, and the total of board feet for the area is learned.

Many foresters branch out into related fields such as *nursery work* and *landscape gardening.*

Teaching is an important branch of the forestry profession. Since

A Timber Cruiser Measures A Fallen Forest Giant

the field is growing rapidly and there are almost as many students in forestry schools as there are trained foresters actually working, the profession needs a large number of good teachers. They must be trained foresters, have practical field experience, and understand teaching methods. There are, of course, many specialized branches of teaching, and many of these teaching jobs are combined with research work.

This chapter has not covered the complete list of forestry jobs, although it has taken up the larger and more important job opportunities. There is no end to the related fields of work.

In Chapter VI there is a discussion of another group of forestry jobs—the down-to-earth, hard labor work of the private lumber companies.

One point should be remembered. The various forestry jobs are not in water-tight compartments. There is a considerable amount of shifting from one type of work to another. Many skills, training requirements, and personal traits needed are the same throughout many different types of jobs.

In another sense, also, the jobs are not separate. They are all part of a great team carrying on a single job. The different members of the team may have different assignments, but all are working to the same end. That end is to increase our nation's riches in every good thing that the forests have to offer.

Chapter V

TRAINING FOR THE PROFESSION OF FORESTRY

WE'VE taken a quick look at the work of the foresters. We have learned that the ranger is the key man in the forestry profession, and that most of the other professional men in this field have the job of helping the ranger. They make plans, advise, direct, check up. They work as directors, supervisors, specialists, and teachers. The ranger's other co-workers are generally the untrained or partly trained men who do the routine jobs.

One thing a study of the forester's work shows clearly — the forester must be well trained. His job has many sides. He must know a great deal about a great many different things.

The good forester must be more than a skilled hunter, horseman, and fisherman. It is not enough for him to have a strong back and a steady hand. All these are helpful, but they are only a start. Long training is needed before a man is really able to handle a forest, whether it is controlled by the national government, by a state, or by a lumber company. He must be something of a scientist and a great deal of a businessman.

It's a Tough Climb to the Top

The requirements for a successful forester, whose job it is to manage and operate some of the vast forest acreage of the United States, may be generally listed as the requirements for almost any successful professional man. He must be honest and sincere, ingenious, physically able to stand hardships, enthusiastic in his work, and most important of all, he must be willing to begin at the bottom and undergo great difficulties and hardships, if necessary, on his way to the top.

The staff working under a forest ranger may be made up of a large group of lookout towermen, fire fighters, telephone linemen, road and trail workers, game wardens, truck drivers, and many other types of workers. In such jobs experience usually is needed more than training. Such positions under the district forest ranger are likely to be filled by local men who are good woodsmen, who know local conditions, and who are accustomed to hard work.

Many of our modern forest rangers are old timers who have worked their way up from the ranks. However, in order to take civil service examinations for the better jobs in forestry today, the job seeker must have a college degree. In some of the less important jobs, experience may take the place of college training. But most employers of foresters want well-trained employees. They feel that college work is necessary to help develop the type of workers they need. It is true that in many instances the man who comes up from the ranks may be better suited to the job than one with college training, but few employers wish to take that chance when college graduates are at hand.

To Outwit A Spreading Fire, These Forest School Trainees Drop A Tree

It is also true that most college-trained men take jobs up toward the top of the list, leaving the lower-pay jobs for men who have not had the training. Many times those who begin at the very bottom have the ability and determination to advance beyond those who started higher on the scale than they.

Teaching positions and the usual jobs with state forestry organizations require the services of men with training. There are few positions open to those who have not secured a college education.

The first courses in the science of forestry that we know anything about were organized in the German Universities of Berlin, Leipzig, Jena, and Giessen between the years 1770 and 1780.

When the Bureau of Forestry became the U. S. Forest Service in 1905, very few men could be found in the nation who had been trained in the profession of forestry. Our first foresters were trained in European forest schools. Those men were chosen to be the leaders in the forest conservation movement which swept the country.

Men to manage the national forest units in the field were gathered from the ranks of trappers, cowboys, lumbermen, traders, and hunters. The jobs of those first forest officers were rough and often dangerous. With little equipment and no sympathy from local residents, they had to protect the forests from fire and from timber thieves. The first rangers had to be constantly on guard for their lives. This is no longer true.

Today the nation watches with friendly interest the work of foresters. Seldom is the man in the field subjected to the great hardships and dangers of the old days.

The Society of American Foresters now recognizes 27 forest schools in the nation which give graduate and undergraduate courses in forestry. This is a far cry from the first forest school which opened its doors in America in 1897. This was Dr. C. A. Schenck's private forest school at Biltmore, North Carolina. Shortly afterward, forest schools were founded at Cornell University and Yale.

Forestry Education Covers Many Sciences

Of the 27 forestry schools now open to those who seek degrees in forestry, perhaps one of the most typical college courses is offered by the University of Michigan School of Forestry and Conservation. Here is the school's own description of its course:

"A four-year course leading to the degree of Bachelor of Science in Forestry, and a five-year course leading to the degree of Master of Forestry. The five-year course is strongly recommended for those who desire a thorough training, and particularly for those who wish to specialize or go into research work. Two distinct curricula are offered—one in Forest Production and one in Wood Technology. The Forest Production curriculum is in turn divided into 'General', 'Industrial' and 'Wildlife' programs of study. Ample opportunity is also offered for work leading to the doctorate in forest management, silviculture, forest and wood utilization, forest economics, forest pathology, forest entomology, forest zoology, and wildlife management. Attendance at a ten-weeks' summer session in camp in the Upper Peninsula is required for those in the Forest Production curriculum and fits in best during the summer following the sophomore year. This should be borne in mind by candidates for entrance from junior colleges and other collegiate institutions. Combined curricula in effect with the College of Literature, Science and the Arts, the College of Engineering, and the School of Business Administration enable superior students to obtain both an A.B., B.S.E., or M.B.A. degree and a degree in forestry in less time than would otherwise be possible. The library, laboratories, and experimental areas maintained by the school are ample for the needs of the student and for research activities."

A list of the forest schools today with the degrees granted in 1940 is given below.*

Name of School	Undergraduate Degrees Granted	Master's Degrees Granted	Doctor's Degrees Granted
California	71	20	5
Colorado State	49		
Connecticut	11	2	
Cornell			
Duke		22	3
Florida	9		
Georgia	42		
Harvard		2	1
Idaho	81	7	
Iowa	56	5	
Louisiana	31	2	
Maine	46	6	
University of Michigan	59	36	4
Michigan State	56	4	
Minnesota	73	8	4
Montana	72		
New Hampshire	14		
New York State College	102	27	7
North Carolina	23	4	
Oregon State	73	10	
Pennsylvania State	79	3	
Purdue	29		
Utah	45	6	
University of Washington	78	12	
Washington State	26		
West Virginia	16		
Yale		37	10
TOTALS	1,141	213	34

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*Furnished by the Society of American Foresters.

Chapter VI

FOREST INDUSTRIES

FOR THOSE young men who want an outdoor life in the big timber, but who do not want to take the long college training a forestry career demands, the forest industries offer certain opportunities. These industries, lumbering and naval stores, employ a far greater number of workers than do the government agencies discussed in earlier chapters. Earnings in these industries, however, are lower, and the work is often heavy and dangerous.

As pointed out earlier, the need for lumber for shipbuilding speeded the settlement of the colonies that became the United States. By 1625 the first water-driven sawmill in this new land was built at Jamestown. Six years later another was set up at Berwick, Maine. This marked the beginning of logging and lumbering in America.

As the country grew, the lumber industry moved westward. During the years between 1850 and 1900, lumber camps were concentrated in the north-central lake states. This is said to be the most notable period in the history of American lumbering. There were no trained foresters and no forest management policies. Huge, clear logs were taken out and the remainder of the forests destroyed by fire. Gradually, the rich forests of the northeastern states were cut down and the lumbering industry moved farther westward. Today, more than 90 per cent of all the

Mill Workers Like These Help Turn Lumber Into Big Business lumber in the United States is secured from the South and the Pacific Northwest.

The lumber industry became big business during the period in which the United States soared to wealth and power as an industrial nation. The 50 years just before the twentieth century saw the annual production of lumber in this country increase from 5,000,000,000 to more than 35,000,000,000 board feet annually.

Today our country uses half of the world's sawn timber. Heavy construction timbers, boards, interior finish, and plywood all come out of the forests of the United States. Since the founding of this nation, lumber cut from its forests has totaled more than 2,000,000,000,000 (that is, two trillion) board feet, valued at about $30,000,000,000!

The vast lumbering industry gives employment to thousands of loggers, and to many sawmill workers as well. Out of 15 leading industries in the United States, lumbering ranks fourth in the number of wage earners employed, fifth in the amount of wages paid, and ninth in value of goods produced.

The bulk of big-scale lumbering is in the production of fir and pine. However, birch runs a close third, being used extensively in furniture manufacturing. There is also much logging of beech, chestnut, oak, cottonwood, and hemlock. In all, nearly 50 woods are cut commercially in the United States.

Lumber Provides Many Jobs

In 1930, the "forest products" industries covering logging, lumbering, and the allied trades (concerned with converting lumber into finished merchandise), employed about 860,000 persons. The depression dropped the total to about 450,000 by 1933, but by 1939, almost 647,000 workers were employed by the 16,000 establishments in this field.

Wages in the lumbering industry vary considerably with the type of work done. Average hourly pay for *all* lumbering employees in 1937 was 53 cents an hour, or about $23 a week. Loggers averaged about 77 cents an hour. Jobs with some private companies paid as low as $40 per month.

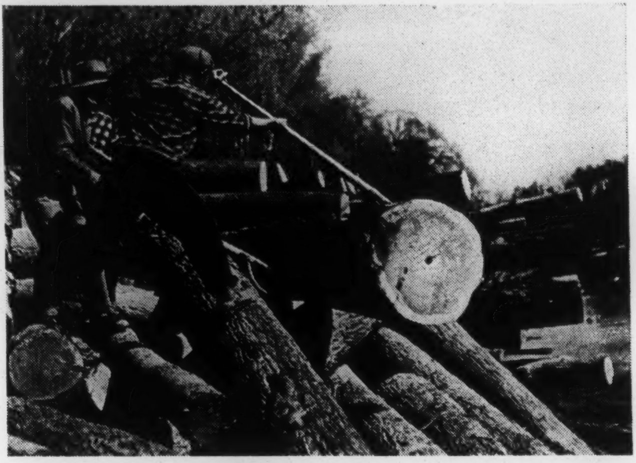
The vast lumbering industry consists of locating good timber, cutting that timber, transporting it to mills and there converting it from raw logs into finished lumber, or other desired products.

Once the stand of timber is selected, there begins the most colorful and exciting job of all—that of "logging." Originally, logging operations were carried on close to rivers where the cut logs could be floated downstream to the sawmills. Gradually, however, the logging camps had to move inland to reach new timber, until today a logging crew may be preceded by a road-building crew or a railroad construction gang.

The largest part of a logging crew is made up of fallers and buckers. *Fallers,* working in pairs, undercut the big trees with axes so that they will fall in the desired direction. Then they finish cutting down the tree with a big cross-cut saw. This is a job calling for strength and skill, and fallers really earn their average wage of a dollar an hour.

When the tree has been brought crashing to earth at the desired spot, the *bucker* takes over. One bucker works with each pair of fallers. His job is to cut the fallen tree into regular lengths so that it can be more easily transported. At the same time, *limbers* attack the fallen tree with axes to strip it of limbs and branches.

The next job is to get the logs out of the forest to the assembling and loading point. This is done by "skidding." Formerly, skidding was a rough-and-tumble job of hooking a cable on the log and hauling it out by the shortest route. Today, however, the job of skidding logs (with horses, mules or tractors) is handled much more carefully so as not to injure the younger trees which will grow up to market size in later years.



Breaking A Log Jam Is Tricky, Risky Work

No special training or education is required for logging work and there are no apprenticeship systems. However, beginners can start only at unskilled jobs and work their ways up as they gain experience. Logging definitely demands youth, and few loggers remain in the work past the age of 40, except in the less strenuous branches of camp life.

Eight-hour days, five days a week is the usual working time. The loggers frequently live in camps far from civilization for months at a time, but usually they enjoy comfortable beds, good food, and sometimes movies and entertainment.

Logging work is dangerous. In 1935, one out of every 156 workers in logging camps was fatally injured. Also, minor injuries are frequent, and many of the larger camps employ full-time doctors and nurses. In 1937, a study of industrial hazards placed logging at the top of the list of dangerous occupations with 116 injuries per million work hours, as against an average of 17 for all industries.

On arriving at the mill, the logs enter one of the most highly organized, high-speed industries in the country—"sawmilling." The incoming logs usually are floated in a millpond for easy handling and to wash off the dirt until they are ready to be milled. *Pondmen* do the dangerous work of walking on these floating logs, using long pike poles to shift the timber so that it can be carried into the mill.

Boom men work on the sides of the pond, pushing the logs toward the "slips," where *slip men* move them into position to be picked up by conveyor chains. Considerable strength and agility are needed to hold such jobs.

Logging Is a Seasonal Industry

Aside from the physical dangers, the biggest drawback to lumbering as an occupation is the irregularity of employment. Since a great deal of the lumber produced goes directly into the construction of homes, and into the furniture for those homes, the industry is seriously affected by slumps in the building trades. However, new scientific research is developing other uses for lumber products, with the result that the field is becoming slightly more stable.

Both in lumber camps and in the various types of mills, it is the policy of the management to fill top positions with men who have been advanced from the ranks. Previous education is of little importance, although the tendency is to give preference to young men with some high school education.

A number of different factors are tugging in opposite directions at present-day lumber production. On the negative side, certain plastics and other synthetic materials have taken the place of wood in a number of building operations, and in some types of furniture.

The Future Looks Good

But the war has helped to overcome this set-back. Troop housing and other army and navy projects will require about 650 million feet of lumber! Also, since the war has blockaded most of our pulp imports, paper manufacturers are turning to domestic sources for pulpwood.

A young man who wants a logging job or a sawmill position will generally have to apply directly at the camp or sawmill. The wages aren't too bad and opportunities for advancement are fair, but remember that jobs in timberland are neither steady nor safe.

Most jobs in the naval stores industry are with private companies. This large industry is located mainly throughout the South. The naval stores industry is said to employ some 50,000 persons and pay wages amounting to more than $15,000,000 each year. Most of the positions are field jobs held by persons without training in the profession of forestry. Experienced hands are usually employed for the positions of foremen and overseers.

The Story Behind Turpentine

The naval stores industry has an interesting history. In colonial days the equipment and methods were crude. The raw resin (the pitch from pine trees) was boiled, and the distilled turpentine was caught in sheepskins. The turpentine was then secured by wringing out the skins.

The naval stores industry got its name because the cooked resin was used in caulking ships and in treating ropes to protect them from salt spray. This industry developed rapidly, and within 18 years after the turn of the 18th century the export of pitch from America to England had increased from only 177 to over 82,000 barrels.

Getting turpentine from trees has developed from a wasteful proc-

A Turpentine Worker Bleeds Resin From A Tree ess to an exact science, and today huge turpentine stills with elaborate equipment are used.

The *resin,* or raw pitch, is taken from long-leaf and slash pine trees. When these trees are chipped their wood cells make resin which pours out on the wounds to protect the wood from insects and fungi. This resin flows down the face of the tree into containers at the base. The wound is freshened or chipped each week during the working season, which normally lasts from April until November of each year. The resin is hauled to a still, where the *turpentine* is distilled, leaving the *rosin.* Both products have a variety of commercial uses.

Typical of the low-wage forest worker in the southern part of the United States is the man whose job it is to chip turpentine "faces." For this job he receives one-tenth of one per cent per face, or $1 per thousand faces. An experienced man, working long hours, can earn around $1.50 per day in this manner. This is a job for untrained men, and is usually held by Negro forest workers of the South.

There are, as pointed out in earlier chapters, some trained foresters in both the lumber and the naval stores industries. Most forestry people expect private companies to hire more trained men in the future. However, commercial forest firms will still need a great army of untrained and partly trained workers as their main labor force.

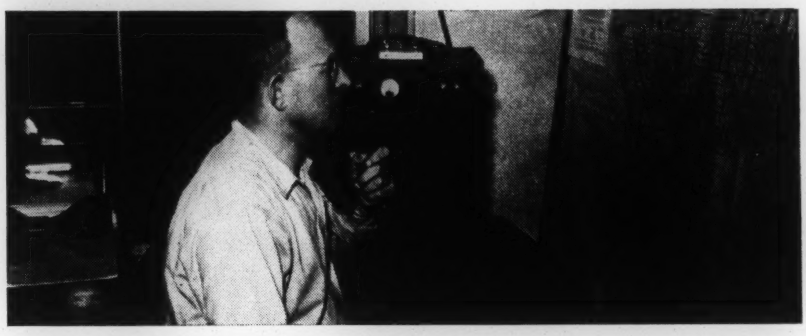
Chapter VII

LOOKING AHEAD

THE FIELD of forestry as a whole is a growing one. As in all professions, new men are needed to fill the places of those who are promoted, go into other fields, or for any reason leave the profession. Then, too, new land is yearly added to our national forests, state forests, and other public forest units. More wood-using private companies are placing their timbered lands under intensive management plans in order that their forests may yield a never-ending supply of wood.

Forestry Faces a Work-Filled Future

Normal labor turnover creates only about 50 professional jobs a year in the U. S. Forest Service. These vacancies, caused by deaths, retirements, resignations, and dismissals, must be filled to maintain the personnel of the Service at its present strength. These figures seem pitifully small, especially since the federal government employs a third of all the foresters in the country. It should be remembered, however, that any jobs created by the enlargement of the staff will be in addition to those caused by labor turnover.



This Trained Forest Worker Receives A Fire Call Via Radio

Forestry as a profession and an applied science is just beginning to come into its own. Prospects for foresters are considerably brightened by the increased public and governmental interest in soil and water conservation.

Industries using wood for the production of paper, plastics, synthetic fabrics, and furniture need men with forestry training. Graduate foresters can also put their training to work for them by becoming landscape architects, nurserymen, surveyors or highway engineers.

Lumber Consumption Is Growing

On the other hand, the booming plastics industry is creating new products to replace wood in many cases. Steel frame houses and cement products are invading the building field. However, so many uses for wood remain unchallenged that these new discoveries do not, as yet, menace the lumber industry or the jobs of men employed in the lumber camps. In fact, the consumption of lumber in 1939 was 26 billion board feet, over twice as much as in 1932, and one and one-half billion feet more than in 1937.

Fears that constant lumbering would, within a few years, wipe out our forests also have proved groundless. Present reforestation methods are sufficient to insure a constant future supply of marketable lumber.

Rayon and a number of plastics made from wood have opened extensive markets that were unheard of a few years ago. And even many metal industries, such as steel and automobile, use a great deal of wood.

Research Opens New Forest Paths

The research going on at the present time to develop new lower-cost homes, points the way toward a boom in lumbering. The government activities to promote housing have helped keep lumbermen employed. The airplane industry, increased shipbuilding, and the growing use of plywood and insulating board made of wood wastes also are helping to raise employment in the field.

Men are needed in laboratories just as they are needed in the woods and fields and forest lands themselves. Research continues to develop new products from wood, products sometimes so important that whole new industries are founded.

Forest tree nurseries, CCC camps, experiment stations, colleges of forestry—these and many other activities need *men with training and experience.*

"A combination businessman, diplomat, evangelist, technician, and laborer who knows plenty about trees and doesn't object to hard work." That is one forester's description of the type of man fitted for a career in forestry.

As in most other professions, forestry jobs are not "soft." Real men are needed—men who are capable and honest and unafraid, men of wisdom and intelligence, who dare march steadfastly and fearlessly down the road of progress.

Using Blitzkrieg *Tactics To Fight Forest Fires*

National Forests

THE COUNTRY has been divided into 10 *national forest regions* with a regional forester in charge of each. Their headquarters are located as follows:*

Region 1. Northern region (Montana, northeastern Washington, northern Idaho, and northwestern South Dakota), Missoula, Montana.

Region 2. Rocky Mountain region (Colorado, Wyoming, South Dakota, Nebraska, and Oklahoma), Denver, Colorado.

Region 3. Southwestern region (Arizona and New Mexico), Albuquerque, New Mexico.

Region 4. Intermountain region (Utah, southern Idaho, western Wyoming, eastern and central Nevada), Ogden, Utah.

Region 5. California region (California and southwestern Nevada), San Francisco, California.

Region 6. North Pacific region (Washington and Oregon), Portland, Oregon.

Region 7. Eastern region (Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, Pennsylvania, New Jersey, Delaware, Maryland, Virginia, West Virginia, and Kentucky), Washington, D. C.

Region 8. Southern region (North Carolina, Tennessee, South Carolina, Georgia, Alabama, Mississippi, Florida, Arkansas, Louisiana, Texas, that portion of Oklahoma east of the Indian meridian, and Puerto Rico), Atlanta, Georgia.

Region 9. North Central States region (Michigan, Wisconsin, Minnesota, North Dakota, Iowa, Missouri, Illinois, Indiana, and Ohio), Milwaukee, Wisconsin.

Region 10. Alaska region, Juneau, Alaska.

National Parks

NATIONAL FORESTS are the largest employers of rangers, but our *national parks* need many men in these jobs, also. Their work is similar to that of the Forest Service men.

Twenty-seven areas were included in our National Park System in 1940:

Abraham Lincoln, Kentucky
Acadia, Maine
Bryce Canyon, Utah
Carlsbad Caverns, New Mexico
Crater Lake, Oregon
Fort McHenry, Maryland
General Grant, California
Glacier, Montana
Grand Canyon, Arizona
Grand Teton, Wyoming
Great Smoky Mountains, North Carolina—Tennessee
Hawaii: Islands of Hawaii and Maui
Hot Springs, Arkansas
Lassen Volcanic, California
Mammoth Cave, Kentucky
Mesa Verde, Colorado
Mount McKinley, Alaska
Mount Rainier, Washington
Olympic, Washington
Platt, Oklahoma
Rocky Mountain, Colorado
Sequoia, California
Shenandoah, Virginia
Wind Cave, South Dakota
Yellowstone, Wyoming—Montana—Idaho
Yosemite, California
Zion, Utah

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*From Publication 290—U. S. Department of Agriculture.

MAKE YOUR OWN LOCAL SURVEY OF FORESTRY JOBS!

If you are interested in learning about forestry jobs in your own community and state, here are some of the things you can do:

1. Write to your state department of Forestry or Conservation for information about forestry jobs in the state.
2. Write to the state university or to private universities for information on training requirements and forestry courses which they offer.
3. If you live near a state or national park or forest, get a group of your friends together and pay it a visit. Before you go, draw up a list of questions regarding job requirements, earnings, opportunities, etc., and ask the rangers and other forestry workers you meet about them.
4. Write to your state department of Forestry or Conservation or to the district office of the U. S. Forest Service, asking for a ranger or other forestry worker to come and speak before your class or group.
5. Keep a scrap book of pictures and news of national parks, forests, and lumbering developments. Perhaps you can arrange a bulletin-board display of this material.
6. Visit a local lumber yard (or logging camp or sawmill, if there are any near your community) and learn something about the different kinds of wood, the various jobs, and the requirements and opportunities for different types of lumber workers.
7. Go to your local library and draw up a list of all the books and magazine articles you can find dealing with lumbering and forestry.
8. Contact your local and state chambers of commerce and any lumbering associations in the state for information on business and employment trends in lumbering and forestry.
9. Write to your state civil service commission asking for information on requirements and coming examinations for state foresters.
10. Prepare a report on forestry jobs in your state showing:
    - (a) Number of workers, sex, age range.
    - (b) Trends of employment—telling how many forestry workers were employed in 1910, 1920, 1930 and 1940.
    - (c) Conditions of work—showing wages, hours, hazards, etc.
    - (d) Qualifications—showing education, training, and other requirements for forestry jobs.
    - (e) How to get in, where to apply, beginning jobs, cost of training, etc.

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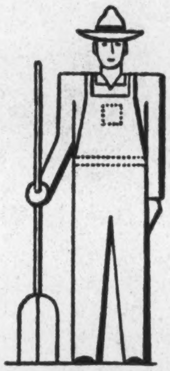
OPPORTUNITIES IN FARMING

By

PAUL W. CHAPMAN

WOMEN'S BUREAU
MAR 14 1941
DEPARTMENT OF LABOR



AMERICAN JOB SERIES
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SCIENCE RESEARCH ASSOCIATES
1700 Prairie Avenue, Chicago, Illinois

OPPORTUNITIES IN FARMING

by

Paul W. Chapman

Dean, College of Agriculture

University of Georgia

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Illustrations by

Eigil Rasmussen

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FOREWORD

If all the fields of work in which the American people are engaged were pictured as trees, Agriculture would, in reality, be the largest in the grove. As foresters say, it would be a DOMINANT tree, and its leaves and branches would tower above all others.

Each of the many branches on this great tree would represent the vocations classified under the head of Agriculture. But most important in this group would be the vocation of farming. Farming not only includes the largest number of workers, and renders the most essential social service, but it makes all other work possible.

One-fourth of all our people live on farms. These citizens supply food for themselves and for those persons who live in cities. They produce raw materials for our factories. They also help maintain our urban population by sending many young men and women to live and work in towns and cities.

Farming now offers employment and a way of life to almost 450,000 young Americans each year. In this period of our history, which has witnessed so much occupational change and unemployment, a field which supplies so many jobs is worthy of special consideration. This monograph has been prepared to help make such study possible.

Chapter I

WHAT FARMING OFFERS AMERICA'S YOUTH

FARMING is one of the earliest occupations of man. It still provides the most direct means of securing the necessities of life — food, shelter, and the raw materials for clothing. For thousands of years farming has ranked first among the vocations in the number of persons for whom it provided employment. Today three-fourths of the world's workers are farmers.

Even in a highly industrialized country like modern America, agricultural pursuits absorb a very large percentage of our youth.

In the United States we have more than six and one-half million farms providing work for about 9,000,000 men. Let us assume that each of these men now engaged in farming started to work for himself at the age of 20, and that he continues until he reaches the age of 60. This means an average working life of 40 years. It also means that one-fortieth of these men must be replaced each year if the total number is kept constant.

To maintain the number of farm workers now employed in the United States, it is necessary for about 225,000 young men to enter the business of farming each year. But since most farmers marry rather early in life, it is to be expected that most of these young men will take wives. Thus farming offers work opportunities and a way of life to nearly 450,000 young men and women each year.

This is an enormous number; it is almost one-fourth of all the young people who come of age each year.

But will such a large number of boys and girls choose farming for their life's work? And will we need so many workers on the land in the future? These are questions of vital importance to those young people who may be interested in agriculture. And since such large numbers are involved, they have social significance for all the citizens of our country.

Farming is a way of life as well as a way of making a living. This may account, in some measure, for its popularity.

In spite of all the uncomplimentary facts which may be lined up against farming — and there are many of them — it has a peculiar appeal which draws men and women toward it just as a magnet attracts small pieces of iron.

George Washington, Thomas Jefferson, and practically all the political and civic leaders of early America were farmers. They belonged to the *landed gentry*, a term which meant aristocracy and prestige. In the social order, landowners have always been set apart. At one time in France, for example, the wives and daughters of landowners were privileged to wear distinctive bonnets which were created by Paris designers. Even today in the United States most of our richest citizens, regardless of the ways in which they acquire their money, own farms and country homes. Some of these people engage in practical farming. Many contribute toward the advancement of agriculture by breeding and testing pure-bred animals.

Here's Work That Satisfies

What is the peculiar appeal which farming holds for men and women? Perhaps the explanation lies in the fact that it is a business which enables one to satisfy the creative urge which is universal in all persons of ambition. For some this desire is expressed in creating books, pictures or music; for others the same impulse finds expression in the building of houses, bridges and highways. But there seem to be no more satisfying materials with which to work than plants and animals.

Creative impulses cannot, however, account for the large number of people who choose farming as a career. The majority of those entering agricultural pursuits are the sons and daughters of farmers. It is relatively easy for most of them to become farmers, and many find it difficult to establish themselves in any other type of work.

Regardless of the factors which led to their decision, a very large number of young people in past years have entered the business of farming. A large number in the future will undoubtedly continue to choose farming as their life's work.

Is it possible that we may have too many farmers in the future? Should the farm population be maintained at its present level? Do we need 225,000 male recruits each year?

Are There Too Many Farmers?

For the guidance of farm youth the Extension Service of the United States Department of Agriculture, which administers the 4-H Club work of our country, has studied these questions. This Service has concluded that if the young people now on the land are to raise the standard of living above that which their parents have attained, many must enter non-farm occupations. They say that:

1. Fifty out of every hundred farm boys will ultimately have to become entirely dependent upon a non-agricultural occupation.
2. Twenty-five out of every hundred will live on farms where the resources within the farm will be so small that to maintain a decent standard of living they will have to find a part-time non-agricultural job.
3. Only twenty-five out of every hundred will be on farms where there are resources sufficient to maintain a fairly adequate living.

These conclusions mean that in the opinion of the United States Department of Agriculture about 188,000 boys may properly enter farming each year, about 94,000 will be able to make a good living, and an equal number must supplement farm earnings with other work if they wish to attain a standard of living better than that enjoyed by their parents.

To understand these statements in relation to job opportunities for youth, it is important for us to know how many boys of each age group there are in our country and where they live.

Farmers constitute about one-fourth the population of the United States, but they have more than one-third of the children. Today there are about 1,150,000 boys in the nation in each teen-age group. About 375,000 for each age-group — say 16 years — are living on farms, 200,000 in small towns, and 575,000 in cities.

Even if 225,000 boys were needed to fill the ranks of farmers each year, there would still be many farm boys who would be compelled to move to cities to find work. This "surplus" of farm youth may be very important from the standpoint of national welfare, for there is not a large city in the United States where enough children are being born today to maintain its population at the present level.

These statements, of course, have not taken into consideration the number of city boys who will become farmers. This is not necessary, for under normal conditions the number will be very small, although it will include some of our best farmers. In spite of this, we may expect that our farm population will continue to decline.

There Are Fewer Farmers Now

During the Colonial period of American history, practically all our people were farmers and landowners. In 1790, more than 90 per cent of our people were making a living on the land. When the Census of 1930 was taken, it was found that farming accounted for only 21 per cent of our gainfully employed workers. Since that time the farm population has increased slightly, not because more farmers were needed, but on account of decreasing employment opportunities in cities. Furthermore, the *proportion* of Americans who earn their livings by farming has continued to drop during the last 10 years.

The consistent decline in the relative number of workers engaged in agricultural pursuits is a tribute to the ever-increasing efficiency of America's farmers. At the time the Constitution of the United States was adopted, 19 typical American farmers were able to grow just enough produce for their own families and for one other person. But at the present time, 19 average American farmers are producing enough for themselves and 66 other persons! The application of science and invention to agriculture released about 60 per cent of the farm population for other occupations in the 60-year period between 1870 and 1930. Had there been no improvement in farming methods during this period, 110,000,000 persons would be living on farms today. But less than one-third that number now make their homes on the land. Yet they are able to supply the needs of the American people and, in addition, produce surpluses for export to other lands.

Looking Forward

What of the future? Can farm workers continue to increase in efficiency?

The future trends of efficiency in farming, which will largely determine the number of people in the vocation, will depend upon urban employment opportunities more than on any other factor. Farms have always released extra workers for non-farm jobs. They constitute a reservoir of labor, which may remain on the land or move to towns and cities, depending on economic conditions. With unemployment in cities, there is little incentive to increase farm efficiency or production per worker.

But maximum farm efficiency has not been reached. Improved machinery and increased use of power can, when needed, release many farm workers for industrial and commercial occupations. It has been said, for example, that if mechanical cotton pickers were universally used on the farms of the Cotton Belt, the services of 2,000,000 workers now living on these farms would no longer be required. This is perhaps the most significant possibility for increased use of machinery which may come to American agriculture. But in every type of farming practiced in the United States, labor-releasing methods not now used will be introduced in the future. Such changes will mean fewer workers, but larger incomes for those engaged in farming.

In the future we may expect some decentralization of industry and perhaps shorter hours for industrial and other non-farm workers. Seasonal industries, which provide employment for only a limited number of months each year, will be located in small towns and the open country. These changes will bring increased opportunities to city dwellers for living on the land and engaging in part-time farming. To persons who normally would be engaged in farming on a full-time basis, such changes will bring possibilities for some non-agricultural employment.

In spite of these trends, however, it is clear that farming will continue to offer employment for a large percentage of America's youth. Whether or not these employment opportunities are desirable is very largely a matter of personal opinion.

Are You Interested in Farming?

Interest in what one is doing is the greatest factor in success. In every walk of life there are men and women enjoying satisfying careers. *There is more in the man than there is in the job!*

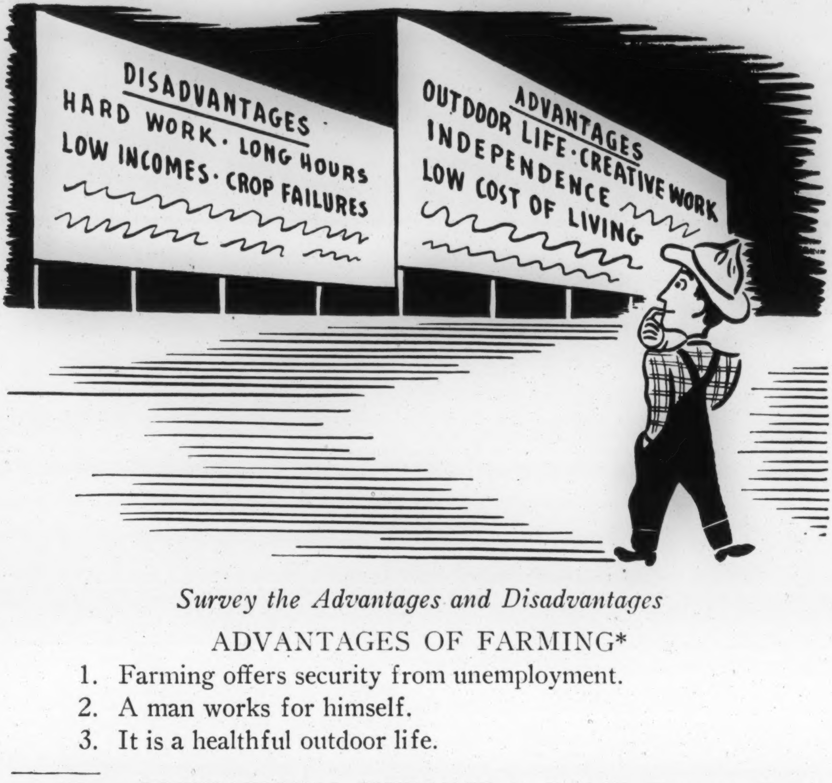
To determine whether one is interested in farming, it will be helpful to think about the following questions:

1. Do you like to work outdoors?
2. Does living in the open country appeal to you?
3. Do you like plants and animals?
4. Are you interested in watching their growth from day to day?
5. Do you enjoy visiting farms and market places where agricultural products are sold?
6. Are you satisfied to spend much of your time alone?
7. Are you willing to work long hours during certain seasons of the year?

8. Do you like to plan your own work?
9. Do you have enough will power to control your own actions; to work when no one tells you to do so?
10. Can you manage your financial affairs successfully?
11. Are you strong enough to handle the numerous heavy jobs about a farm?

Any one who can answer *yes* to all these questions has the principal qualifications for making a good farmer. Those who answer the majority in the negative should seek some other vocation.

Not all the people who possess the qualifications for success in farming will wish to enter this field of work. Many may feel that they will be happier and more successful in some other type of employment. Such individuals will want to weigh the advantages and disadvantages of farming and compare them with other work opportunities. It is well to remember, however, that advantages and disadvantages of any kind of work are, in the final analysis, merely matters of personal opinion.


DISADVANTAGES
HARD WORK · LONG HOURS
LOW INCOMES · CROP FAILURES
ADVANTAGES
OUTDOOR LIFE · CREATIVE WORK
INDEPENDENCE
LOW COST OF LIVING

Survey the Advantages and Disadvantages

ADVANTAGES OF FARMING*

1. Farming offers security from unemployment.
2. A man works for himself.
3. It is a healthful outdoor life.

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*From OCCUPATIONAL GUIDANCE, by Paul W. Chapman, Turner E. Smith and Co., Atlanta, Georgia, 1937.

4. There is variety in the work to be done.
5. Personal and household expenses are small.
6. A farmer may be at home with his family.
7. There will be no danger of losing the job on account of age.
8. It is a mode of life that makes saving possible.
9. Farmers live well compared with city workers who earn the same amount of money.
10. Farming provides the opportunity for stimulating experiences in the improvement of livestock, fruits, and crops, over a period of years.

DISADVANTAGES OF FARMING

1. Capital is required to become established.
2. Income is uncertain due to weather and other factors beyond the control of the farmer.
3. The farmer usually cannot set a price on his products.
4. There is no weekly or monthly pay check.
5. At present there is an overproduction of farm products.
6. Schools and churches are not as good as those in cities.
7. A farmer competes with untrained workers.
8. There is outdoor work to be done in bad weather.
9. It is difficult to get away from the farm for vacations.
10. The achievements of farmers are not recognized to the same extent as accomplishments in other vocations.

Many of the former disadvantages of farming no longer exist. Improved machinery is removing drudgery; radios, better highways and automobiles have wiped out isolation. Rural electric lines are being extended. Most of the problems of farming today are economic ones, which must be solved through group action. Local and national organizations have been formed to deal with these problems, but many farmers are not members of these groups.

In commenting on the opportunities in agriculture, Edward A. O'Neal, President of the American Farm Bureau Federation, said recently, "I am convinced that the outlook is more favorable for equality for agriculture than it has been in many years. So I would say that any young man who is at heart a countryman can prepare to follow this vocation with a fair prospect that he will be able to live well. There will never be opportunities for accumulating great wealth on the farm, but there will be abundant opportunities to live purposefully and constructively, and to achieve a fair measure of financial success."

Chapter II

FARM OCCUPATIONS

AGRICULTURE literally means the care, or cultivation, of fields. During the heyday of the Roman Empire, the word had a restricted meaning in keeping with its derivation — *ager,* a noun meaning "field" and *cultura,* a verb meaning "to cultivate." Today the term also embraces man's production of all forms of plant and animal life.

In the days of Horace and Virgil, cities were enclosed by walls. Outside the gates large fields were devoted to the production of grain and forage crops. The limited space within the walls was used for the growing of fruits and vegetables. In the event of attack, the people of the city could withdraw from the fields and live for a time within the walls, where the crops most valuable for food were produced. The care of those crops grown within the walls was known as horticulture. In Latin, *hortus* means an "enclosure," or a "garden."

Agriculture Is a Broad Field

The word agriculture today in the United States is used as a comprehensive, all-embracing term, which includes the "culture" of all plants. It also includes the production of all livestock. Formerly, the care of animals was spoken of as "husbandry," a word which implies wise management. We now use the term "animal husbandry," to mean livestock farming, but it is regarded also as a part — an essential part — of agriculture.

Strictly speaking, all persons engaging in the production of plants and animals for use or sale are agriculturists. But according to custom and usage they are known as *farmers.* The word "agriculturist" has come to apply to those persons engaged in the scientific and economical occupations related to farming.

Farming is not just one occupation, but many. The first division of farm work into different operations took place when the sons of Adam were assigned individual responsibilities. Abel, we are told, was a keeper of sheep; Cain, a tiller of the ground. The Bible also records that in the ancient days of human history there were swineherds, keepers of the vineyards, and other specialists in the care of farm products.

Many kinds of farming are practiced in the United States today. The U. S. Census Bureau classifies all farms into twelve groups. These are called *farm types.* The name of the type is taken from the crop which brings in 40 per cent or more of the total farm income. Thus, if 40 per cent or more of a farmer's income is derived from the sale of milk, his farm is known as a *dairy farm,* even though he produces products for sale other than those obtained through the management of dairy cattle. The twelve types of farms recognized by the Bureau of the Census are: *general, cash-grain, cotton, crop-specialty, fruit, truck, dairy, animal-specialty, stock-ranch, poultry, self-sufficing* and *abnormal.* A brief explanation of these terms is as follows:

General — farms producing a great variety of products, no one of which accounts for as much as 40 per cent of the total gross income.

Cash-Grain — farms depending on the sale of one or more of the following crops: wheat, corn, oats, barley, flax, rye, buckwheat, rice and grain sorghum.

Cotton — farms deriving at least 40 per cent of their earnings from cotton (lint) and cottonseed.

Crop-Specialty — farms selling sweet sorghum, sugar cane, sugar beets, maple sugar, soybeans, cowpeas, field peas and beans, tobacco, hay, peanuts, Irish potatoes, sweet potatoes, mushrooms or other minor field crops.

Fruit — farms specializing in the production of apples, peaches, all tree fruits, nuts, grapes, strawberries, raspberries, cranberries and other like crops.

Truck — farms growing and selling vegetables.

Dairy — farms producing and selling milk, cream, butter, dairy cows and calves.

Animal Specialty — farms specializing in the production and sale of cattle, sheep, hogs, goats, wool, mohair and possibly slaughtered animals.

Stock-Ranch — ranches, mostly in the Far West, devoted to the production of animals grown largely on grass.

Poultry — farms selling chickens, ducks, turkeys, geese and eggs.

Self-Sufficing — farms on which the value of the products used by the operator's family is 50 per cent or more of the total farm production.

Abnormal — includes five sub-types: farms of institutions or country estates, farms operated on part time, boarding and lodging farms, farms emphasizing forest products, or farms operated by a dealer in livestock.

Table I contains important information concerning the number, average size, and average gross returns from the several types of farms found in the United States.

Table I

FACTS REGARDING THE MAJOR TYPES OF FARMING

Type of Farm	Number	Average Size (Acres)	Average Gross Returns
General	1,044,000	138	$1,500
Cash-Grain	454,000	352	2,900
Cotton	1,640,000	72	1,000
Crop-Specialty	431,000	109	2,000
Fruit	141,000	71	3,000
Truck	84,000	60	2,000
Dairy	604,000	139	2,750
Animal-Specialty	479,000	230	3,650
Stock-Ranch	71,000	2,912	7,000
Poultry	166,000	62	2,000
Self-Sufficing	408,000	70	525
Abnormal	384,000	71	1,250

Many worthwhile deductions may be made from a study of the table dealing with facts regarding the major types of farming in the United States. It is interesting, for example, to note that there are more cotton farms in our country than any other type, that these farms are relatively small, and that the income derived from them is less than from any other type, with the exception of those that are merely self-sufficing. Based upon income, one choosing a type of farming in which to engage would naturally be attracted to the stock-ranch. But noting the size of these ranches and the probable investment required to own such establishments, we can understand why there are so few of them.

Locality Helps Decide Type of Farming

Climate, soil, rainfall, markets, and many other factors play a part in determining the type of farming which predominates in any section. Apples, for example, cannot be grown profitably in all parts of the country. And while dairying may be conducted with some degree of success in all regions, the greatest developments have taken place near large markets for fluid milk. There are usually logical, practical reasons for the type of farming found in any community or section. It represents the collective experience of all the people who have ever farmed in the locality.

While there are only twelve types of farming listed by the Bureau of the Census, this list does not by any means present a complete picture of America's farming opportunities. Most of the types may be subdivided into different kinds of farming, each of which is a distinct occupation. To illustrate, there are about 150,000 fruit farmers in the United States. But this number includes men growing apples in Washington, peaches in Georgia, grapefruit in Florida, walnuts in California, pecans in Texas, strawberries in Missouri, and cranberries in New Jersey. Each is actually a separate occupation. In the same way, each type may be subdivided many times. There are, perhaps, around 100 kinds of farming in which one may engage. Each of these requires special technical information; each presents different problems; and each has some peculiar appeal which seems to present unique opportunities.

Different Kinds of Farm Workers

Within each type of farming there are employment possibilities for four classes of workers. These are: (1) *farm owners,* (2) *managers,* (3) *tenants* and (4) *hired hands.*

A "farmer" or "farm operator," according to the census definition, is a person who directs the operation of a farm. Hence owners of farms who do not themselves direct the farm operations are not reported as "farmers." Farmers are divided into three general classes, namely, *owners, managers* and *tenants.*

Careful Handling Brings Pig Profits

Farm owners include (1) farmers operating only their own land, and (2) those operating their own land and some land rented from others.

Managers are farmers who are conducting farm operations for the owners for wages or salaries.

Farm tenants are farmers who, as tenants, croppers, or renters, operate only hired land. Five classes of tenants are recognized, as follows:

(1) *Share Tenants* — those who pay the owner of the land a certain share of the products, as one-half, one-third, or one-quarter, for the use of the farm, but furnish their own farm equipment and animals.

(2) *Croppers* — share tenants who do not furnish their work animals.

(3) *Share-Cash Tenants* — those who pay a share of the products for part of the land rented by them and cash for another part.

(4) *Cash Tenants* — those who pay a cash rental, as $7 per acre for crop land, or $500 for the use of an entire farm.

(5) *Standing Renters* — those who pay a stated amount of farm products for the use of the farm, as three bales of cotton, or 500 bushels of corn.

Hired hands are laborers employed for cash payments on a temporary or permanent basis.

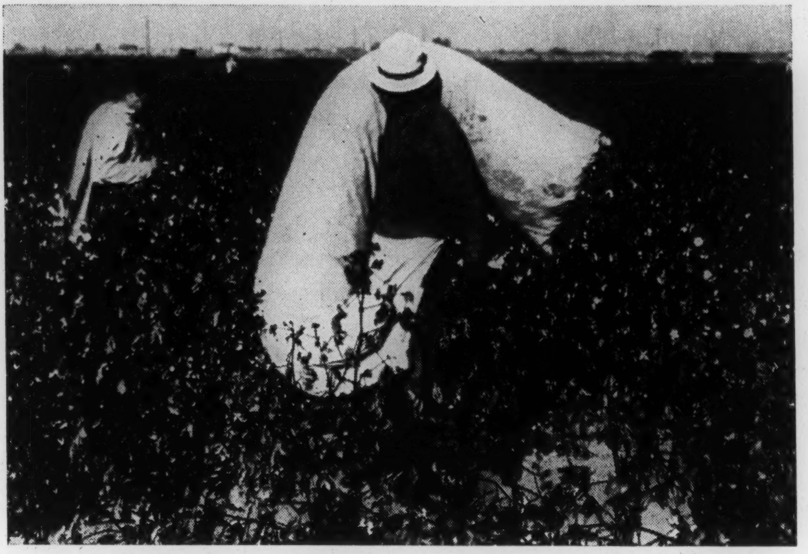
There Are Fewer Hired Hands

To give some idea of the approximate number of workers in each group, when there were 6,288,000 farms reported for the nation, there were 3,368,000 owners, 56,000 managers, and 2,664,000 tenants. At the same time, about 4,390,000 farm hands were employed, largely on a seasonal basis.

For many years the number of "hands" required on farms has been decreasing. This is due mainly to the improvement and increased use of farm machinery.

Years ago, for example, thousands upon thousands of transient workers and college students obtained summer employment in the wheat fields of the West. This work opportunity no longer exists, except for a limited few. Under the harvesting methods used at the opening of the century, grain was cut with a reaper, which left a wake of bundles to be collected and shocked. After standing in the field for a time the bundles were loaded on wagons and transported to the separator, or threshing machine. Many "hands" were needed to cut the grain, bring it from the fields, operate the threshing machine, handle the straw, and carry the wheat to the granary or elevator. Now a machine, called a combine, cuts and threshes the grain at one operation. Human labor has become a minor factor in the growing of grain.

Labor-saving machinery has been applied to most farm operations. Only the picking of the cotton crop remains a major hand operation in America's modern system of farming. Millions work at this task each fall and winter. We are told, however, that if the use of a cotton-picking machine became universal — as it may — some 2,000,000 of these workers would lose the jobs which now give them at least a subsistence living from the land.



Hands Are the Main Tools Used in Cotton Production

For decades the percentage of tenant farmers has been increasing. Prior to 1880, 75 per cent of the farmers of the United States owned their own land. By 1935, fewer than one-half of the nation's farm operators were full owners. That tenancy should have increased was a logical development. It was only little more than two generations ago when the settlement of the great middle-western portion of our country was made possible by the development of transportation facilities. Men (some are still alive) took part in the "run" that opened the State of Oklahoma to homesteaders. Land was cheap and easily acquired. But with the passing of the frontier and the dissipation of the public domain, land became limited and hence relatively expensive.

It is generally assumed that tenancy is an undesirable position, as compared with ownership. This is true insofar as ownership represents a capital reserve, or accumulation of earnings. It is not necessarily true, however, that a farm operator with limited capital can earn more money as an owner than he can as a renter. Through wise management he may be able to get a larger income through investments in stock and equipment than in land. Probably the majority of our better farmers rent land in addition to that which they own. This is a modern trend in farming which has resulted from the extensive use of labor-saving machinery.

Tenancy May Lead to Ownership

Tenancy itself is not a social blight, except insofar as it is a symptom of unfair distribution of earnings which makes it necessary for farmers to live on their capital rather than on their incomes. And tenancy is often a step toward ownership. A young man preparing to enter upon the business of farming with capital limited to a few hundred dollars can become a share tenant much more easily than he can become a farm owner.

Farming occupations are so varied in their requirements that any individual who desires to enter the business can find some opportunity suited to his means and experience.

Chapter III

WORK ON THE FARM

SUPPOSE we go "down on the farm" and examine some of the work performed by the different kinds of farmers and farm laborers.

Farming today is, thanks to new machinery and labor-saving inventions, a far easier job than it was 10 or 20 years ago. But it is still hard work, and anyone who is not physically fit to work long hours in all kinds of weather should never consider a future as a farmer.

In all but a few sections of the country, the weather will permit only one planting a year for most crops. This means that between the spring ground-breaking and the fall harvesting, the farmer must do almost a full year's work in order to earn a full year's living.

Through the winter months, the general farmer's income is cut to the few dollars he may receive for the sale of eggs, poultry, milk and cream. His work is less strenuous, but he is by no means on a vacation. Morning and night there are cows to be milked, the livestock to be fed and cared for. Equipment and machinery that has had a hard summer's wear must be reconditioned for the spring work. Repairs around the house, barns and granaries are usually done at this time.

A Race Against Time

With the first spring thaws, farmers must be ready to face another year of hard fighting for their livings. The same chores they performed all winter must go on, but now the farmer gets up before dawn so that he can get his milking and feeding out of the way and be in the fields by sunup. Ground must be broken and prepared for planting within a certain definite time if crops are to be planted early enough for safe harvesting, and if he hopes to benefit from the water left in the soil by melting snows.

Consequently, the farmer races against time all through the spring planting. Nature will not wait. If storms cut down the number of days he can spend in the fields, the same amount of work must be done in fewer days—which means starting earlier and staying out later.

Then there is a short breathing spell through the growing months and once more the farmer is racing against time and bad weather to get his crops harvested and safely under cover. Eighteen hours a day, seven days a week, is simply normal routine to the busy farmer at this season. Obviously farming is no career for a weakling or one who feels that he must start and stop by the clock.

This is true, not only on general farms, but also on almost every type of farm. On a cattle farm, for example, 12 hours a day in the saddle are common. Range riders, counterparts of the old cowboy, constantly must cover the thousands of acres of range, checking the grass and water conditions, watching for sick or injured stock, testing and repairing the hundreds of miles of fence.

Milking by Hand and Machine

On a dairy farm the workers don't travel far, but their jobs are not easy. Milking may be done by hand or by machine. Hand milking usually takes from 10 to 15 minutes for each cow, and from 12 to 15 cows are assigned to each worker. About twice as many cows can be handled by a worker if a milking machine is used. This machine, which milks two cows at the same time, does not draw all of the milk from the udders. It is operated until the flow slackens; then the job is finished by hand, a process called "stripping."

The large dairy farm employs two general kinds of labor, farm hands and milkers. The farm hand, or laborer, has as his main job the care of crops that are needed for feed. He plants and harvests the hay, alfalfa, and grain that are grown on the farm. Other tasks may include filling silos, baling hay, and even painting the dairy buildings. His pay is usually less than that of the milker, unless he has been promoted to the position of foreman, and has charge of other farm hands.

The most important worker on the farm is the milker. He must be able to run a milking machine, or milk by hand for two hours or more at a time. Not only must he milk the cows, but he is responsible for their feeding and general care and must clean and wash the barns and stalls. On small farms, the milker also carries out the tasks of the farm hand. If he is capable and has gathered some years of experience, he may be promoted to milkers' foreman, or herdsman.

Women Dairy Farmers

Some of the most successful superintendents in the country are women. In fact, about 4,000 dairy farms are owned by women. At the same time, very few women can be found in the important jobs of milker and farm hand. Except in the small family-run farms, it seems that the day of the "fair milkmaid" is past.

Women are scarce, too, in truck farming, which is hard, gruelling work, calling for long hours and constant watchfulness during summer.

Truck farming is very intensive farming, for the farmer must get the largest possible harvest out of a small piece of ground. Most truck farmers get three to four complete crops in a season, when weather is favorable. The average person consumes nearly 200 pounds of vegetables a year. So highly concentrated are truck farms that a good one could raise this amount of "truck" on a patch of ground only 45 feet square.

There Is No Time for Loafing on a Truck Farm

A truck farmer's life is one of feverish, high-speed activity, from the first plowing of the ground in spring to the final freeze-up in the fall. The small area under cultivation means that he has far better control over outside conditions than does the general farmer, and his ingenuity constantly is being strained to improve his work still further.

As an example, the truck farmer often gets weather reports by radio throughout the day and night. If he learns that a wave of extreme cold or heat is approaching, he may throw a large force of men into a particular field to harvest or protect the crops against the expected change in weather.

In the same manner, he keeps in constant touch with market prices in all the cities within his marketing area. If, for example, he learns that green beans are bringing better prices 100 miles away than in his local market, he may rush through a quick harvest and have several tons of beans speeding to the distant city by truck, ready for the next morning's sales. Truck farmers often make their entire season's profits by such lightning-fast shifts in marketing.

Many farms employ hired laborers, especially during the harvesting season. Most of the regular hired hands will be found on the general farms. The farm laborer holding down such a job must be an all-around man, able to "pitch in" at any task. Perhaps the best way to get a picture of the farm laborer's work is to spend a day with a typical mid-western hired hand.

A Day with Hank

You will have to get to bed early because Hank, the hired man, rolls out in the morning before the chickens are up. The farmer and his boy are out and around just as early, and together they tackle the morning "chores"—the tasks which must be done each day.

By the time Hank has walked to the barn with the milk pails, the farmer's boy has already started for the pasture to drive the cows and horses into the barn lot. Hank climbs a narrow ladder into the loft of the barn and spends a few minutes wielding a "fork," tossing down alfalfa for the stock. Hank then measures out oats for the horses and pitches some hay to the cows. Then the farmer's boy begins milking, while Hank goes out to feed the hogs.

After carrying several half-bushel measures of corn over to the pig trough, Hank bangs on the fence and splits the air with a long shout, "Whoooooeeeeee." Trailed by a couple of litters of pigs, the hogs "come a-running" from all corners of the hog lot. Taking care of the hogs is an important part of Hank's work.

When the hired hand gets back to the barn, the farmer will be busy "currying" the teams to be worked in the fields. Currying is done with a special comb which cleans the mud and dirt from the horse's back, and keeps the hide in good shape. Hank gives a hand, then harnesses the teams so that they will be ready as soon as breakfast is over.

This finished, Hank takes over the milking so that the boy can feed the chickens and gather the eggs. Probably milk is used only for the family and for feeding the stock. Perhaps the cream may be separated and sold to a local dairy.

Six o'clock breakfast, and then the real work of the day begins. The corn, which has been planted a few weeks before, is standing some 10 inches high. The job now is to cultivate it—that is, to dig up the weeds and keep the earth loosened. To do this, Hank hitches the team up to a cultivator—a two-wheeled farm implement with small "shovels" set so as to plow under the weeds on both sides of the corn row.

The field must be gone over at least twice before it is "laid by" in July, when the stalks are too high to permit machine cultivation. The corn ears have formed and nothing remains to be done with the corn except to go through it with a hoe or corn knife, and chop out weeds missed by the plow. In the fall the corn will be ready for harvest, and then Hank will husk the ears from the stalks and haul them in to the crib, ready for feeding and the market.

A Farm Hand at Work

Cultivating, as well as most other work on the farm, is a sunup to sundown job. Night brings the chores again, and it will be dark before the day's work is done. After supper, Hank listens in to the market and weather reports before "hitting the hay," to get ready for another 4:30 a. m. start.

Other Duties on the Farm

But working the corn is only part of the job. Some of the farm acreage is planted with oats and another 20 acres may be in alfalfa or timothy hay. When these crops are ready they will have to be harvested, too.

Rain or shine, there is work for the hired hands, and plenty of it. On rainy days equipment will be fixed, or perhaps the barn cleaned. The farm laborer must be something of a handy-man. In a day's work he may be called upon to repair buildings, stretch barb-wire fencing, build chicken sheds, plow the fields or fix the family Ford.

Chapter IV

INCOMES FROM FARMING

FARM incomes vary widely. There are thousands of farm families which eke out a bare existence; other thousands are making many times as much as independent professional men, who constitute the highest income group of the nation.

Wide differences in income characterize any group in which the individual is at the same time a worker, an executive, and also a proprietor. Who can say, for example, how much a merchant makes? He may belong to one of America's 60 wealthiest families; or he may never have paid an income tax. The same variation applies to farm incomes.

When management and capital are factors in determining the incomes of large numbers of persons, earnings are unequally divided. Thirty-five per cent of the farmers of the United States earn 80 per cent of the national farm income. A similar unequal division applies in the operation of stores, hotels, factories, and other types of business.

Less is known about farm incomes by the general public than about the earnings of any other large group of our citizens.

Years ago a great number of farmers retired early in life. Small towns in the Middle West were filled with farmers who had acquired enough money to live in idleness. This group, to a great extent, helped populate California. They were substantial citizens and regarded as desirable settlers.

The Truth about Farming

Today conditions have changed. Few farmers retire from active life. And the hordes moving on California, who have been "tractored" off their "one-horse" farms, are regarded as social menaces.

Neither of these situations gives a true picture of farm conditions, or the possibility of earning an adequate income from the soil.

The "rich" farmers of the previous generation, who retired early in life, did not make their money selling farm products. Their wealth came chiefly from increased land values. Most of these farmers either homesteaded government land, which they acquired without cost, or they bought farms "for a song." With the development of transportation in the West and the increased population of the East, this land became valuable. So many farmers sold their land and lived on the interest earned by their capital. It is interesting to note that in this period of our history — when living costs were low and interest rates were high — a family could safely retire on an accumulated capital of $10,000. Today such a sum invested with safety would not bring in as much as relief wages.

But if the picture of farming as painted in popular fancy during the early years of the present century was too rosy, today it is too dark. Fiction writers and political speakers have given the impression that farmers are a poverty-stricken group. In our best-selling novels we read stories of families — driven from the land — wandering over the face of the continent in ramshackle cars seeking a few days' work. Farm "relief" is something of a political issue which fills the columns of our newspapers and gives the general impression that farmers are clamoring for unreasonable hand-outs, which must be paid from the public purse.

Neither presentation is accurate. Fiction sometimes makes use of unusual characters and situations; politics deal too often with half-truths.

Farm Incomes May Be Either Good or Bad

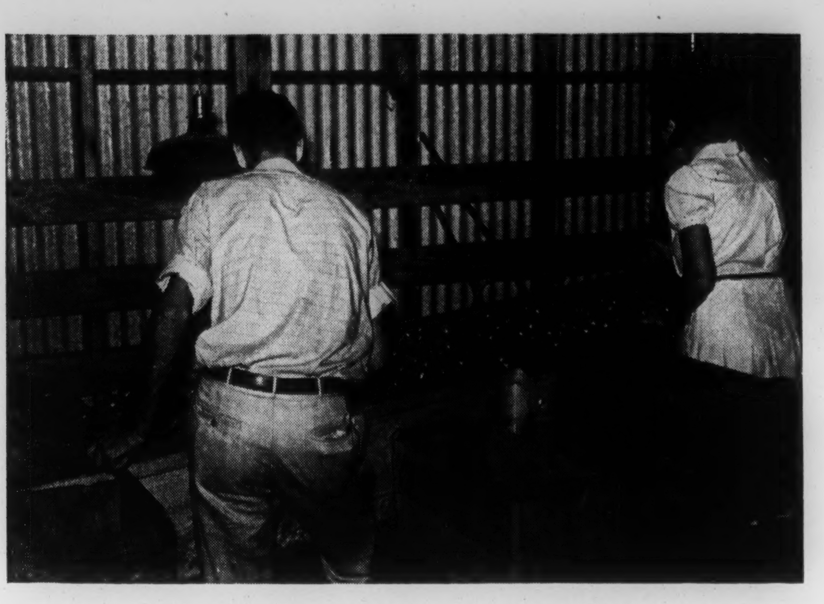
Millions of farm families are today earning satisfactory incomes. Their total earnings compare favorably with those of workers in other walks of life. In the accumulation of property, the farmer has generally done as well as the man in an urban occupation. The farmers who constitute one-fourth of the population of the nation also own one-fourth of the total property of the nation. The average value of the property of the farm families of the United States is $9,668, as compared with property holdings of $8,709 for non-farm families.

In California, Florida, Massachusetts, New Jersey, and perhaps one or two other states, farmers earn more than urban workers. In all other states farmers' incomes are lower than those of persons engaged in non-farm occupations.

Intensive farming and specialty crops explain the relatively high incomes of farmers in the states listed.

California probably ranks first among the states of the nation in the variety of farm products produced. These farm crops are advertised in the best magazines; they are sold in all parts of the country. Every housewife is familiar with California oranges, grapefruit, lemons, peaches, raisins, grapes and walnuts. These are just a few of the farm crops for which California is noted.

Florida is a land of sunshine, fruit, flowers and vegetables. During the winter months, when the prices of fresh vegetables are highest, Florida is busy feeding that portion of our population which can afford to live on those fruits and vegetables that are "out of season."



Packing Tomatoes Is a Specialized Job

Climate is the most important factor in the high farm incomes of California and Florida. Nearness to the nation's largest food markets explains the incomes of farmers in Massachusetts and New Jersey. Poultry, dairy products, summer vegetables, all high value per acre enterprises, account for the major portion of the earnings of these eastern farmers.

It Costs More to Live in the City

City incomes are usually higher than those earned by our rural and farm population. They have to be. It costs so much more to live in a city than it does in the country. And this is one of the reasons why it is difficult to compare accurately the relative value of farm and city incomes. Another reason is that wise farmers produce for themselves so much that city families must buy. Such savings in expenditures rarely appear in the statements of farmers' earnings and yet they are just as real as the money placed in the weekly pay envelopes of persons who work at city wage-earning jobs.

A city family of five with an annual income of from $1200 to $1800 spends about $52.50 a month, or more than $600 a year, for food. The farm family has the advantage of so planning an adequate food budget that many of the items needed can be produced on the farm. Shelter, clothing, operating maintenance, and other items on the family budget cost much less in the country than they do in town. To cook a meal, the city family may have to drop a quarter in the gas meter; the thrifty farm family simply brings in a little fuel from a convenient woodpile. This is one of many examples which might be cited to show that it requires a larger cash income in town than in the country to maintain the same standard of living.

Before dealing specifically with the earnings of farm families, it might be well to debunk a popular impression. Most of us have an exaggerated opinion of the amount of money earned by the typical American family. We talk of the "American Way" — the American standard of living! We are often reminded by writers and speakers that ours is the richest nation on earth. With only six per cent of the world's people, we have most of the automobiles, telephones and radios. We own most of the world's gold. As a nation, we are rich beyond measure. This is fine. It is gratifying. All citizens of the United States take pride in these facts. But, as individuals and family groups, we are concerned primarily with the spendable income which we have available for living.

Figures on Earnings

The typical American family of four persons has an income of from $90 to $125 a month. Not all this money is earned by the head of the family. The earnings of the husband and father are often supplemented by those of the mother and children.

One-half of America's families have less than $1,000 to spend yearly. Two-thirds get less than $1,450 annually; seven-eighths, less than $2,500. Fewer than one million families—out of more than 33,000,000 — earn as much as $5,000 annually. More than six and one-half million families each year earn less than $500.

It is well, in examining any occupation, to bear these figures in mind. They make up a reliable basis for honest thinking. While it is pleasant to think of earnings in terms of the maximum, it is safer to plan in terms of an average or typical figure.

In a recent year over 3,000,000, or almost 50 per cent, of the farms in the country averaged less than $1,000 worth of products. These farms contributed only 11 per cent of the value of the farm products sold in that year, which is evidence of the unequal distribution of the farm income among those engaged in this business. On one out of six of these 3,000,000 farms the value of the products used at home exceeded the value of those sold. About 350,000 of them were farms on which the operators devoted only part time to farming, and worked 150 or more days each year at other occupations. Over 1,000,000 of these low-income farms were located in the Cotton Belt and were operated by sharecroppers. But an equal number were scattered throughout the East and Middle West. More than one-half of all the rural children in America were living on these farms.

About one-third of the farms in the United States each year sell products valued at between $1,000 and $2,500. There are 1,150,000 farms from which the value of the products sold annually is above $2,500; 147,000 with sales between $6,000 and $10,000; and about 25,000 with annual gross incomes in excess of $20,000.

Detailed information concerning the distribution of farm income is given in Table II, which was prepared by the United States Department of Agriculture.

Table II

FARMS CLASSIFIED BY VALUE OF PRODUCTS SOLD

Value of Products Sold	Number of Farms	Percentage of Farms
Under—$ 250	379,000	6.3
251— 400	518,000	8.7
401— 600	766,000	12.8
601— 1,000	1,245,000	20.8
1,001— 1,500	937,000	15.7
1,501— 2,500	981,000	16.4
2,501— 4,000	628,000	10.5
4,001— 6,000	291,000	4.9
6,001— 10,000	147,000	2.5
10,001— 20,000	61,000	1.0
Over— 20,000	25,000	.4

A study of the facts revealed in this table may recall to the mind of the reader the statement that 35 per cent of the farmers earn 80 per cent of the total national farm income. Actually, the 3,000,000 farms with the lowest incomes make only 11 per cent of the total farm sales, and have average net spendable incomes of less than $500.

In 1925 the *Prairie Farmer,* an agriculture magazine, initiated the "Master Farmer" movement. This was an effort to recognize the achievements of outstanding farmers. Since that time, through the Standard Farm Papers, an organization of state and regional magazines, the movement has become national in scope. This has made it possible to secure information concerning the business operations of the best farmers in our country. And while these men were not chosen because of large incomes, young men considering farming as a life's work will be interested in the financial aspects of their operations.

The average Master Farmer has an investment in his business of about $45,000. Of this sum, about $35,000 represents the value of his land, and the balance, livestock, equipment and supplies. His farm is larger than that of the average farmer, being not less than 500 acres in the South and at least 250 acres in the North and East. His labor income, after all expenses and interest are deducted from his sales, averages about $3,600, although there are some incomes as high as $25,000. When one realizes that these are the best farmers in the nation the incomes may seem small compared with the possibilities in other vocations. This is a correct deduction. Farming usually offers a good living for the efficient, but few persons have ever attained great wealth as a result of farm work.

Cattle Raising Is Large-Scale Farming

Many factors in modern society are unfavorable to farming. While 25 per cent of the American people are dependent upon farming for a living, they receive only about 10 per cent of the national income. Every organized or legislative act which increases the wages of city workers tends to increase the difference between farm and city incomes which already exists. This condition has been improved to some extent, however, through the payments made to farmers by the Agricultural Adjustment Administration. The struggle to secure a fair share of the nation's income has not yet been won by our farm population, but it is being waged with greater hope of success than ever before in our history.

Chapter V

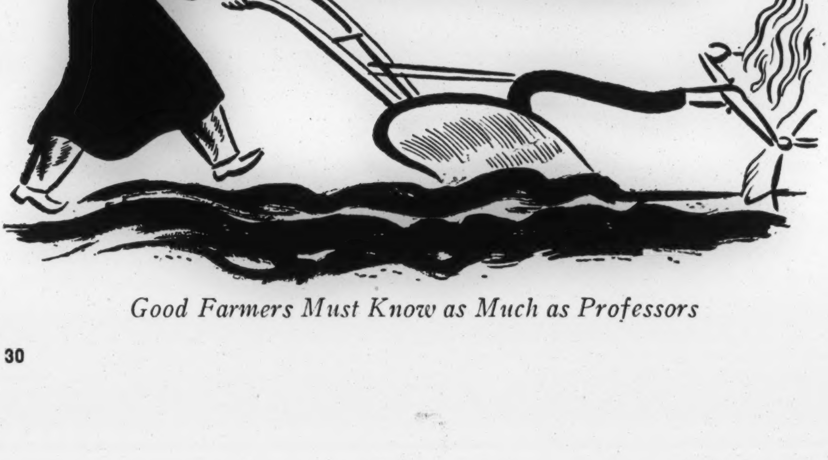
TRAINING FOR FARMING

ANYONE may enter the business of farming. There are no training barriers. And yet it is one of the most involved of the thousands of vocations in which Americans are engaged.

Lawyers, accountants, and beauty parlor operators must pass examinations. Airplane pilots must hold licenses; school teachers must have certificates. Special qualifications are required for the majority of the desirable occupations. But anyone who cares to do so may become a farmer.

This does not mean that farming consists only of simple, routine tasks which can be mastered in a few hours, like many jobs on the assembly lines of mass production factories. Not at all! It is extremely complex. There are important decisions to be made; new situations must be dealt with constantly. To be successful, farmers must possess the best qualities of laborers, business men and scientists; they must, among other qualifications, be both producers and salesmen.

William Dempster Hoard, one-time governor of Wisconsin, said, "The truth of the whole matter is this—that as far as mental effort, extensive learning, and applied knowledge are concerned—the management of soil and animal life call for the exercise of brain power a



Good Farmers Must Know as Much as Professors thousand times greater than is required in the so-called learned professions."

But farmers have not always agreed with the viewpoint expressed by Governor Hoard. In the past, many failed to appreciate the need for education as preparation for their work. The absurdity of such an attitude was expressed by a college student in the following words:*

> "My father was 'agin' education for farm folks, yet he got out of bed every morning at the signal from a clock made by skilled workmen, put on clothes and shoes made by educated manufacturers. His breakfast was cooked on a stove and in utensils made by skilled hands. Every tool he used during the day was the product of scientific and mechanical training. At night he slept in a bed made in a well-organized factory operated under the supervision of trained executives.
>
> "On our factory-built wagon, he hauled our products to educated buyers and bought our supplies from well educated merchants. Our meager earnings he first deposited with educated bankers, and later invested in schemes proposed by educated crooks. Within a few years he lost enough money to have given a good education to all his children. But he had never seen any use in 'edjicashun' for folks that was farmin' and thus he handicapped nine persons who, with the proper preparation, might have become successful farmers and leaders in rural life."

Education Pays

The question naturally arises, therefore: *What is the relationship between education and success in farming?* And another question related to this is: *To what extent is specific training for agriculture desirable?*

Many studies have been made to determine whether, from the standpoint of the farmer, education pays. All such investigations show that education usually increases the net income. Both questions raised in the previous paragraph are answered in the following statements from a report published by the Dean of the New York State College of Agriculture at Cornell University:

"Farm boys of school age who are questioning the advisability of entering or completing high school should consider the increased earning power which education gives.

"There appear to be positive relations between the degree of education and farm labor income that are well worth noting. Education is a factor, along with others, in making for larger financial success on the farm.

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*From a publication of Abraham Baldwin College, Tifton, Ga.

"Farm surveys taken some years ago in different parts of the United States indicated that the labor incomes of farm owners who had attended high school were, on the average, 71 per cent larger than the labor incomes of farmers who had not gone beyond the district school. The farmers who had attended high school owned, on the average, 43 per cent more capital. With equal capital, a comparison of the two groups showed that the high school farm owners made at least 25 per cent more than did those who had not attended high school.

Farm Problems Are More Difficult Now

"The scientific and business problems that farmers must solve are more difficult today than they were a generation ago; however, schools and colleges are better prepared to give instruction concerning them. Instruction now is of direct assistance in the making of profitable business decisions. While education has been the best investment in the past, it promises even greater returns for the future.

"In cost-accounting work at the College of Agriculture it has been found that, among the farmers who have cooperated with the College in keeping cost records, those who have taken a twelve-weeks' short course at the College have made labor incomes 44 per cent greater, on the average, than have the other cooperators who have received no college training.

Higher Incomes for College Graduates

"Every year students at the College visit and study profitable farms in western and central New York. Nearly half these farms are operated by former students of the College. The labor incomes of these former students are twice as large, on the average, as the labor incomes of the other successful farmers visited, while the farm capital averages 28 per cent more on farms operated by former students.

"The average labor income made by former students of the College is unusually high among all farmers of the state. From 1,095 records in the fruit regions, only 14, or 1.3 per cent, of the labor incomes were as large as those for the former-student group. In one of the prosperous dairy sections of New York, the College obtained 509 records of which only 8, or 1.6 per cent, of the labor incomes were as high as the average for the former-student group."

Of course, it may be pointed out that generally it is only the richest farmers who can afford to send their sons to college. It is these sons who would normally earn the largest farm incomes, even if they had no special education.

However, studies made by other land-grant colleges and by the United States Department of Agriculture support the facts and conclusions drawn from the studies made in New York State. Both general education and specific training are profitable investments from the standpoint of practical farmers. For this reason those interested in the vocation of farming should inform themselves concerning available facilities for acquiring agricultural information.

Few workers in other vocations have such unlimited training opportunities as are available to farmers.

Every state has an agricultural college, supported in part by federal funds. These institutions offer four and five year degree courses with opportunities to specialize in almost any phase of agriculture. Short courses, of every type for which there is a demand, usually are available in most state colleges.

These Boys Will Be Scientific Farmers

Vocational agriculture is taught in almost every rural high school in the United States. The teachers are generally farm-reared and college-trained; they have had professional preparation for the work in which they are engaged. This instruction includes practical farm work on the part of the pupils, under the supervision of the instructors.

Practically every county has an agricultural agent who, while a local employee, is a representative both of the state college and the

United States Department of Agriculture. Thus, the largest department of the federal government is no farther removed from any farm than the seat of the county government.

Literally tons of agricultural information are available to farmers without cost. This information may be secured, in the form of bulletins and circulars, from the state colleges and the United States Department of Agriculture. These publications, for the most part, are available free on request.

The agricultural colleges of our respective states are officially known as land-grant colleges and universities. The title comes from the fact that there was set aside by Congress in 1862 a "grant of land" for the purpose of establishing in each state an institution of learning which would be devoted to the study of farming and the practical arts.

These colleges were created in response to the demands of the farm people; they were charged with specific obligations to our rural and industrial population.

The "Land Grant" Colleges

In 1852, at the Farmers' Convention of the State of Illinois, resolutions were passed which have since been referred to as the common man's educational *Bill of Rights*. These resolutions asked for the establishment of an Illinois Industrial University, and said, in part, as follows:

> (1) As representatives of the industrial classes, including all the cultivators of the soil, artisans, mechanics, and merchants, we desire the same privileges and advantages for ourselves and our posterity in each of our several pursuits and callings, as our professional brethren enjoy in theirs.
>
> (2) The institutions originally and primarily designed to meet the wants of the professional classes as such cannot, in the nature of things, meet ours, any more than the institutions we desire to establish for ourselves, can meet theirs.

The resolutions were concluded with an appeal for the immediate establishment of an institution to meet the needs of the industrial classes.

Just 10 years after the passage of these resolutions, the President of the United States signed an Act (The Morrill Act) which, within a relatively short space of time, brought about the establishment of an "Industrial University" in every state in the nation. These are the land-grant, or agricultural and mechanical colleges.

At these institutions young men study agriculture, engineering, forestry, and other scientific and technical courses; young women register for home economics, physical education, and other practical arts.

The "degree courses" offered in land-grant colleges are four or more years in length. These institutions offer graduate work leading to the *master's* and *doctor's* degrees. But these democratic American colleges also give "short courses" for farmers, farm women, and rural boys and girls. These courses are usually offered during the periods of the year when farmers can best leave home without sacrifice to their work. The length of the courses varies from one day to twelve weeks. Any resident of the state, regardless of age or educational background, may attend the short courses offered by agricultural colleges. These courses usually cover specific farm jobs, or phases of farming; consequently, enrollment is largely limited to those engaged in or preparing for the work with which the course deals.

Farm Research Is Important

Each land-grant college is also an experiment station, which is financed in part with federal funds. These research agencies are constantly engaged in studying the farm problems of the state and region. Publications dealing with these investigations are issued from time to time, and news and feature stories concerning the findings are released to the papers and farm periodicals.

Agricultural colleges are headquarters for the state administrative officers of the Extension Service, the Soil Conservation Service, and other agencies of the United States Department of Agriculture. They train young men for all agricultural occupations, including the teaching of vocational agriculture.

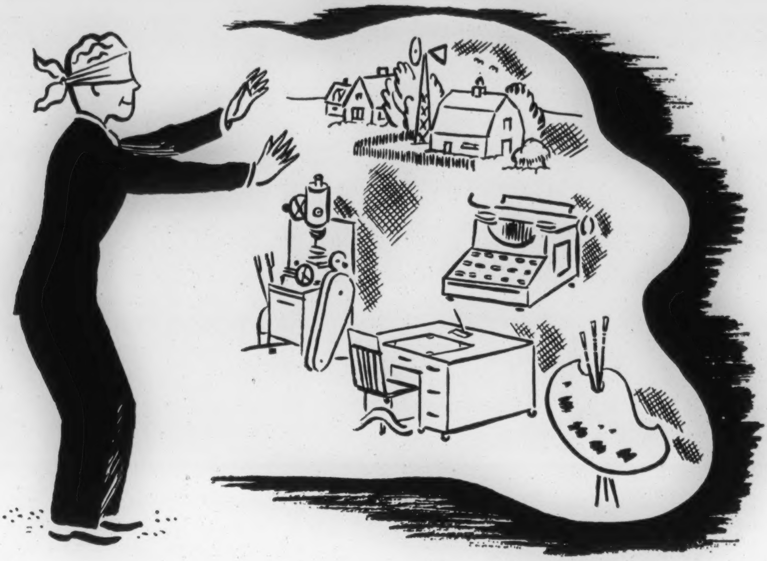
The Smith-Hughes Act

In 1917, Congress passed a national vocational education law, known as the Smith-Hughes Act. This legislation provided for the teaching of agriculture "of less than college grade to persons engaged in or preparing to enter upon the business of farming."

Under the provisions of the Smith-Hughes Act, and other legislation passed by Congress since 1917, thousands of teachers of vocational agriculture have been employed in rural high schools. Their work is supervised by their State Departments of Education. Nationally, the program is administered by the U. S. Office of Education.

Teachers of vocational agriculture, unlike most instructors in rural schools, are employed for twelve months in the year. All are graduates of agricultural colleges with professional training in education, and all must have had practical farm experience.

Any boy attending a high school which maintains a Department of Vocational Agriculture may study agriculture one or more years. According to the terms of the Smith-Hughes Act, at least 90 minutes each day must be devoted to the course. In addition, all students of vocational agriculture must carry on "six months' supervised farm practice." This requirement means that the course in vocational agriculture deals with the practice as well as the theory of farming.



Don't Choose Your Vocation Blindfolded

It becomes apparent, when one considers the vast numbers who enter farming vocations annually, that these Departments of Vocational Agriculture in rural high schools are the real training centers for the farmers of tomorrow. Only a small percentage of those who select farming as their life's work will be able to secure four years of college training as a preparation for their vocation. It is desirable, however, for those who expect to enter highly specialized phases of farming to secure college training if possible. Also, high school training can always be supplemented by short college courses.

There are two farm youth organizations so important that they must be considered as a part of any training program for farming and rural life. These are the F. F. A. and 4-H Clubs. They are personality-developing and character-forming organizations.

The F. F. A.—Future Farmers of America—is a national association of farm boys who are studying vocational agriculture. Practically every school where agriculture is taught has a local chapter. Four degrees of membership are recognized. Achievement is the basis of advancement from one degree to the next.

4-H Clubs are organized and conducted through the leadership of county and home demonstration agents, working in cooperation with the Extension Service of the United States Department of Agriculture. The four H's stand for *heart, head, hands* and *health.* These clubs are open to both boys and girls.

Specialists Help Farmers

In addition to the county and home demonstration agents found in the better agricultural counties of the nation, there are usually other agricultural specialists in the county-seat towns whose services are available to local farmers. Among this number may be found representatives of the Agricultural Adjustment Administration, Farm Security Administration and Soil Conservation Service. There may also be employees of state agencies who assist farmers with marketing, forest-fire prevention, wildlife conservation and other problems with which they are concerned.

No group of American citizens is served so completely and freely with educational aids as the farmer. But to no group are such services so essential. "Agriculture is an art which will enrich those who diligently practice it, provided they understand it," said Xenophon, "but if they do not understand it, it matters not how hard they may labor at it, it leaves them in poverty." This wise observation, which was recorded about 500 B. C., applies just as aptly to the farmers of modern America today as it did to those of ancient Greece almost 2,500 years ago.

Chapter VI

GETTING ESTABLISHED IN FARMING

IN EVERY occupational field there are several job levels. Today's office boy may some day become the owner of a business. The apprentice in a machine shop looks forward to the time when he may be made shop foreman. Bellboys in hotels aspire to clerkships, and clerks wish to become managers.

For convenience in classification, it may be said that in each occupational field there are *beginning jobs, intermediate jobs,* and *terminal jobs.* Beginning jobs are open to those with little or no experience. Intermediate jobs represent steps which lead to ultimate goals. Terminal jobs are those in any field to which the majority of workers would like to advance.

In farming, "hired men" or "wages hands," apprentices, and farmers' sons, hold what may be regarded as beginning jobs; tenants, junior partners, and most managers occupy what may be considered intermediate jobs; landowners represent the terminal position which most farm workers hope to reach.

Low Earnings for Hired Hands

Hired men on farms make very little money. Wages range from $12.50 to about $40 a month. Board, room and laundry, in most sections of the country, are supplied as a part of the compensation of farm hands. At one time in our history such labor was a step toward farm ownership. Today the possible savings from such employment would never enable one to accumulate enough capital to buy a farm of his own. Such work, however, may be the means of acquiring needed experience—an essential for successful farm management.

Apprenticeship has for centuries been the accepted way of learning a trade. This, you will recall, was the way in which Benjamin Franklin learned to be a printer. All farmers' sons are virtually apprentices; their work experience is the most valuable asset many such boys possess. It may be used later in life when they become farm operators, or it may become valuable in some occupation related to farming. City boys may apprentice themselves to farmers as a means of learning the fundamentals of farm operation. They should enter into an agreement to stay for a definite period of time—perhaps two or three years—during which some definite compensation will be paid.

Tenancy represents a step toward ownership. Some tenants, however, are enjoying larger incomes than would be possible if they invested their capital in land. Of course, some others who earn no more than farm laborers will never be able to improve their economic positions.

Bean Pickers Don't Get Rich

There are fewer than 70,000 farm managers in the United States. Most of them make very little money. The majority are working for city people who inherited the land from their parents and are not interested in farming. Where such farms are large enough to have adequate income possibilities, their managers should seek a working contract—over a period of years—which will give them an increasing share of the net earnings. In this way they may be able to accumulate some capital. A few farm managers, most of whom are working on private estates or corporation farms, receive such attractive salaries that they have no desire to become owner-operators.

Junior partners are, for the most part, sons of farmers. Such a relationship between father and son is ideal. It should be encouraged, especially since the time will come, in most instances, when the son must assume the responsibilities of the father. Most such arrangements which are not successful fail because there is no definite provision for a division of the earnings. Young men want money of their own, and failure to get it explains why many boys leave the farm.

The difficulty in advancing to a position as an owner of a farm is the amount of capital required. While more than 50 per cent of the farmers of the country have an investment of less than $15,000, it will be recalled that master farmers have an average capital investment of about $45,000. This is a large sum of money. It is more than three times as much as the value of the goods, fixtures, and other property of the average small-town merchant.

Land Is Expensive Now

Land represents the major investment item in farming. Sixty years ago, the majority of farmers became land-owners by the time they reached their twenty-fifth birthday. At that time land was cheap, or could be acquired through homesteading. Today land is relatively high —as compared with 1880—and often ownership does not come, even for successful farmers, until late in life.

Most persons who buy land must borrow money. State and National banks are not interested in making long-time loans for the purchase of farm land. Their business consists largely of 90-day loans, and loans based on monthly repayments which may be completed within a period of one year or less.

It Takes Money to Own Modern Machinery

To aid farmers in the purchase of land, Federal Land Banks were established many years ago. These banks extend loans to farmers on a long-time basis. But they limit their loans to 60 per cent of the value of the land. Consequently, their services cannot be utilized by a young man unless he has some capital of his own.

More recently the Farm Security Administration was created. Under the provisions of its Tenant Purchase Program, the FSA, as it is called, is selling farms without a down payment and giving the buyer 40 years in which to pay the debt. Such loans were extended in the beginning only to farm families that had been dispossessed, but may be made available to young men who wish to enter farming as a business.

During the first World War, food prices were very high. This resulted in a land boom, and in an over-expansion of the nation's farming operations. For 20 years following the Armistice the country suffered from this folly. Among other calamities, thousands of farmers lost farms which they contracted to buy at very high prices. Many of these farms fell into the hands of insurance and other companies that had loaned money to the farmers who bought them around 1918 or 1919. Several insurance companies today are offering these farms for sale under what commonly is called the "easy payment" plan. Purchasers are required to make only a small initial payment. Interest and principal are spread over a period of forty years.

Learn To Save

Often land may be purchased under very attractive terms from farmers who want to retire or from heirs who do not wish to carry on farm operations.

Every boy who wishes to become a successful farmer and landowner will, on reflection, see the need for acquiring capital. For most boys this means earning and saving.

Most farm boys have some opportunity to make money. Earning and saving are emphasized in the work of 4-H Clubs and in vocational agricultural programs.

In attempting anything worth while it is desirable to set a goal. The farm boys in one state decided that they each would attempt to make and save $1,000 during the four years they were in high school. Perhaps this was too large a sum, but the idea was sound. It might have been better to set a goal of making and saving $50 or $100 the first year, and then increasing the amount each year.

Saving money is difficult. One of the best plans for saving available to farm boys is that of investing in something that grows—say a calf. Some of today's successful dairymen with large, valuable herds began the enterprise as boys by buying calves. All livestock and poultry projects lend themselves to this desirable type of investment for those farm boys who want to make and save some money.

The progress of an individual from one job level to another commonly is spoken of as climbing the vocational ladder.

In a bulletin published by the United States Office of Education entitled, *Young Men in Farming,* a report indicates that the development of the young farmer often occurs in the following order:

1. Allowances
2. Developing a single farm enterprise
3. Working as a hired man
4. Having a share in a farm business
5. Renting a farm
6. Becoming a part owner
7. Buying a farm.

Climbing the Ladder

Through these steps, and some work at other occupations for short periods, the majority of farm owners ascend the ladder of farming. Individuals may skip some of the seven rungs, but, in the main, each leads to a higher level of responsibility.

Young men who wish to succeed in life will do well to realize that there comes a time when every individual must appeal to someone else for help. Boys who enter farming will, among other needs, find from time to time that they must borrow money.

There are always many older people who are willing to help young men and women get established. All that such adults ask of youth is that they take advantage of the opportunities that are theirs. Going to school is the first responsibility of boys and girls. Adults expect regular attendance and good records. Farm boys have the privilege of joining 4-H Clubs and enrolling in high school classes of vocational agriculture. If they are interested in farming, adults will expect them to take advantage of these privileges and to take their work seriously.

Young men who make good records, in terms of their opportunities, usually will find helping hands willing to assist them in achieving the goals which they have set for themselves.

Chapter VII

WHAT OF THE FUTURE?

TODAY it is difficult for anyone to say what conditions will exist in farming 25 or 50 years from now. Opportunities in few, if any, occupational fields can be predicted accurately. All that can be done in speculating about the future of any vocation is to let oneself be guided by the signs that seem to point the way. To determine what farming offers the next generation, we must take into consideration social and economic trends both at home and abroad.

What are the trends that may affect the desirability of farming as an occupation?

We live in a changing world. It is said that the adults of today are farther removed from their grandparents than the grandparents were from Moses and the Pharaohs. Occupations known to our fathers and mothers no longer exist. New ways of earning a living are created each year.

Rapidity of change in the world of work often confuses the youth of today. But there is one comforting fact to which thinking about occupations may be anchored. This is: *There are fundamental needs of mankind which do not change.*

There Will Always Be Farmers

Mankind must eat. This is one fundamental need which will not change. Food is the most important essential for living which is supplied through work. And, since farming is primarily concerned with supplying this need, it has a greater stability than most other occupations in which large numbers of persons are employed.

It is also reassuring that through farming one may supply, for himself and his family, more of the essentials for living—food, shelter, and clothing—than may be obtained directly from any other kind of work. And if the economic system, which we have created through the use of power and machinery, should fail, no possession would be so desirable as land.

As we study the social and economic factors which affect the outlook for farming, we find that some trends are unfavorable, while others indicate brighter prospects for adequate earnings. On the dark side of our picture we see as unfavorable factors: (1) losses of foreign markets for American-grown farm products, and (2) the decreasing rate of population growth of the United States. Distinctly favorable trends include: (1) increased industrial uses for farm products, and (2) national programs aimed at raising the incomes of farmers.

Many factors are difficult to classify. For example, increased use of farm machinery may be a mixed blessing. Those who make use of the latest type of improved farm machinery will increase production per worker, and, as a result, their incomes will doubtless be larger. For such farmers the marked progress that is being made in the perfecting of farm implements and machines is a favorable factor—aside from the fact that it is also making farm work more attractive. But this progress means that fewer workers will be required on farms.

Picking Oranges Is Hard Work

The complete mechanization of farms will tend to increase the national problem of unemployment. This would be unfavorable for farming because the total farm income fluctuates with the ability of the city population to buy food and clothing. When factories are working at capacity, farmers are prosperous, but at times when bread lines form on city streets, prices are low and there is little demand for products from the land.

The loss of foreign markets for products grown on American farms is perhaps the most unfavorable factor looming on the horizon of tomorrow.

In the past we have sold cotton, tobacco, wheat, hogs, and many other farm products to the people of foreign countries. But for years our exports have been declining, and the sales of farm commodities have decreased more rapidly than exports from American factories. It is possible that world conditions will improve in the years that lie ahead, but we must remember that a market once lost may never be fully regained.

The loss of foreign markets affects the farmers in the South more adversely than those in other parts of the United States. For many generations the southern farmers have sold about one-half of their cash crops to the people of other countries. These crops include cotton, tobacco, cottonseed meal, naval stores and many others. About one-fourth of the outlets for these products were lost during the years between 1920 and 1940. This means that millions of farmers in this country lost their jobs just as completely as if they had been laid off by factories. This condition affects all the farmers in our country regardless of where they may live, for it represents a decreased outlet for the nation's farm products.

What about Foreign Trade?

There is a belief today that the exports of the United States can be increased by stimulating trade relations with South America. Unfortunately, the result, should these aims be realized, will be unfavorable for agriculture. For foreign trade is literally *an exchange of goods,* and South America has little to send us, other than the products from her farms.

Decreased foreign trade means restricted markets for farm products. Also, we are faced with the prospect of restricted outlets for farm products in our own country. For more than 150 years the population of the United States has been growing rapidly. This has meant more mouths to feed—or, in other words, constantly increasing outlets for farm products. But, because of a declining birth rate and restrictions on immigration, our country is rapidly reaching the point where our population will remain fairly constant. This condition may be reached about 1960. It means, if the prediction is correct, that the young men who enter farming today will be the first generation of American farmers who have not looked forward to an ever-increasing number of purchasers for their cash crops.

These unfavorable factors which indicate decreasing market outlets for farm commodities may, however, be more than offset by new uses for the products of our farms. Many persons believe that the major task of farmers in the future will be that of growing crops to be used in American factories.

Much has been done already to provide industrial outlets for farm products. Consider, for example, what Henry Ford has done with soybeans. He is using the crops from thousands of acres of this valuable legume in making cars. The oil is used in paints; the meal helps make plastics.

"The time is not far distant when we will be growing our automobiles," Mr. Ford says. If this statement seems a little far-fetched, it is convincing to consider that the Ford Motor Company is using annually the cotton from 433,000 acres, the wool from more than 800,000 sheep, the hair from 87,000 goats, the crops from 11,000 acres of corn, 12,500 acres of sugar cane, and 65,000 acres of soybeans. And these are just a few of the farm products used to manufacture cars and trucks. Many of the chemical companies, such as duPont, also are large users of farm products.

Chemistry and the Farm

Thus we may visualize a future in which the outlet for farm products is not limited by the food we consume and the clothing we wear. Starch is now being made from sweet potatoes, bowling balls from cheese, and motor fuel from corn and other crops grown on the farm.

It is estimated that 500,000,000 additional acres of land will, in the next 10 years, be required to produce raw materials for industry. This is the equivalent of the cultivated land of five or more of our most important agricultural states. In turn, this means more jobs for farm workers.

New developments along these lines come slowly. They are largely the products of chemical research. To stimulate new uses of agricultural products by industry, the United States Department of Agriculture has established four laboratories, one in each of the major agricultural regions of the country. A number of industrial corporations maintain laboratories for the same purpose.

It is hoped, not only for the future of farming but for the welfare of the nation as a whole, that new uses for farm products will be found which will replace the outlets lost through the decline of foreign trade. But so far as the outlook for farming is concerned the loss of foreign markets has already taken place. The trend of future outlets will probably be upward.

The passage of the national farm legislation, popularly known as the AAA, has increased the favorable outlook for agricultural occupations. This legislation tends to keep production in line with market demands. Such a policy, by the way, has always been possible for industry and commerce. It also provides payments, or subsidies, for farmers who cooperate with the program.

Payments to farmers under the AAA program have not always been understood by city people. They have been looked upon by many as a "dole" paid from the public purse. The payments are fully justified, however, in a planned economy. In other words, industry in the United States has, for the most part, benefited from the tariff—which is a special aid to manufacturing. Recently other aids to non-farm groups have been extended through social legislation. The Wages and Hours Law, which fixes the minimum wages for thousands of workers, is an example of such legislation.

Berry Picking Is Hard on the Back

One aim of the national farm legislation is to insure "parity" prices to farmers. This simply means that the products of the farm are to sell for a fair price—one which will enable the farmers, at all times, to exchange them on an even, or fair, basis for the goods and services produced by workers in other occupational fields.

Regardless of the analysis which one makes of the farm outlook, or the conclusions reached concerning the future prospects in this work, individual interest should be the determining factor in deciding the vocation one chooses as his life's work. There are successful persons in every field of human endeavor. And probably nothing plays so great a part in attaining success as the interest one has in his vocation. Any job is a good one, if you like it.

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UNITED STATES DEPARTMENT OF LABOR
FRANCES PERKINS, Secretary

WOMEN'S BUREAU
MARY ANDERSON, Director

✦

SUCCESSFUL PRACTICES IN THE EMPLOYMENT OF NONFARM WOMEN ON FARMS IN THE NORTHEASTERN STATES, 1943

By
FRANCES W. VALENTINE

BULLETIN OF THE WOMEN'S BUREAU, No. 199

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LETTER OF TRANSMITTAL

United States Department of Labor,
Women's Bureau,
Washington, January 31, 1944.

Madam: I am submitting herewith a description of the work on farms done by nonfarm women, and the conditions under which such work was done, in the Northeastern States in 1943. As in industry, the employment of a new group of workers by employers not accustomed to this type of worker creates many problems calling for practical adjustment. This report points out the most successful practices and the steps necessary to secure a better utilization of nonfarm women on farms in the Northeastern States in 1944.

The field surveys were made and the report has been written by Frances W. Valentine.

Respectfully submitted.

Mary Anderson, *Director.*

Hon. Frances Perkins,
Secretary of Labor.

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Courtesy Christian Science Pub. Soc.

GIRLS PICKING TOMATOES ON A MARKET-GARDEN FARM.

Successful Practices in the Employment of Nonfarm Women on Farms in the Northeastern States, 1943

INTRODUCTION

THE AGRICULTURE OF THE NORTHEASTERN REGION

The necessity of using women to help to supply the great demand for agricultural workers became generally recognized in the Northeastern States[1] during the 1943 season. That there were women and girls ready to take farm jobs in 1943 and that many projects for women farm workers were set up and even operating was due largely to the unswerving efforts of pioneer women leaders and to the more farsighted farmers. These men and women, with or without State recognition and aid and before the Extension Service of the Department of Agriculture was charged by Congress with the responsibility of recruiting women for farm work, paved the way and broke down farmers' resistance to the employment of women in 1942. By the spring of 1943 there were increasing numbers of women and girls ready to serve and increasing numbers of farmers ready to try them. By the end of the 1943 season there was no question of the value of the women's work, no question of agriculture's need for them, little question of the farmers' willingness to employ them.

The farms of this Northeastern Region have furnished the fluid milk for the great eastern centers of population, the value of their milk and cream sales (exclusive of cream sold as butterfat), both wholesale and retail, exceeding that of any other division of the United States. In 1941 almost one-third (32 percent) of the potato crop of the country was produced here. The value of the truck crops grown here for market and for processing was over 76½ million dollars, more than a fifth of the total valuation for the whole country. Particularly now that long-distance transportation is curtailed, these are the farms that supply the tables of the homes of this region. In the production of apples, in farm value the second most important fruit of the country, it ranks second and produces nearly one-third of all the commercial crop. Only the Western States (and these now ship east fewer apples than formerly) exceed this region. The Northeastern States produce 17 percent of the eggs, 13 percent of the chickens, of the United States.[2]

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[1] For the purposes of this study, "Northeastern States" conforms closely to the Eastern Division used by the Extension Service of the U. S. Department of Agriculture. It includes Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, New Jersey, Delaware, and Maryland, excluding only West Virginia of the Extension Service group.

[2] From "Agricultural Statistics, 1942," U. S. Department of Agriculture.

While this region is not rated as one of the great agricultural sections of the United States, it is a region which consumes most of what it produces, and any lowering of this production would immediately affect the food supply of the people of this part of the country.

Because it is predominantly an industrial section, the increase in industrial labor demands has been so tremendous that farm labor has been depleted. The Department of Agriculture's map showing the districts where need for an emergency farm-labor program exists shows almost this entire area marked to indicate "large or very large and serious seasonal or year-round labor problem."

The purpose of this bulletin is to sum up and evaluate the 1943 experience in the use of women on the farms in the Northeastern States and to point out some of the important factors to be considered when employing them in the future.

THE LABOR DEMAND AND THE FARMS ON WHICH WOMEN WORKED

In this region owner-operated farms prevail, farms of moderate size, where most of the family assist in the farm operations, one way or another. Depending on the size of the farm, farmers had been in the habit of employing, the year round, such farm hands as were needed to take care of the continuous work, especially on dairy and poultry farms where certain work goes on regardless of season. When spring came, on dairy or general farms one or more extra men, as the case demanded, would be employed for the season. During the haying period again one or more extra hands might be hired by the day or until haying was done.

On the truck or vegetable-growing farms, spring work begins early. The market gardener begins to expand his force as soon as the ground can be worked. According to the crop he grows he needs, besides a continuous force to take care of the growing crops, extra hands to harvest the crops in which he specializes. There are throughout this region a great many truck farms. These are situated near the large cities in great numbers, so that their produce can be taken to market every day. Many of the truck farmers rent land for their crops, usually near their own farms. These farms may employ from a dozen to a hundred workers at a time.

Orchard crops are grown sometimes in connection with truck or dairy farms but principally as major crops. There are many apple and peach orchards—peaches chiefly in Pennsylvania, New Jersey, and New York, apples in every State but chiefly in New York, Pennsylvania, New Jersey, Massachusetts, and Maryland. Pears are a considerable crop in New York and Pennsylvania, and more grapes are grown in New York than in any other State save California. The chief need for extra workers in the orchards is during harvest time.

Commercial canneries are established in these States in the regions where various vegetables, such as corn, beans, and tomatoes, can be grown most easily. Some canneries own large acreages and grow vegetables for their own factories, others contract with farmers to grow vegetables for them.

All these varied types of farms needed help in 1943. Not only were the extra male hands that they had been in the habit of picking up easily when needed no longer available, but the regular year-round hands were largely gone or going to war industries or to the armed services. The realization of that fact on the part of the farmers opened the way for the employment of women. The demand for women, scarcely more than a reluctant toleration at first, began to appear. At the end of the season women had been successfully used on the following types of farms.

1. *Truck or Market-Garden Farms.*—By far the greatest number of women and girls had been employed by farmers growing vegetables and small fruits. From northern Maine to Maryland, from western New York to the end of Long Island, the market gardeners used women from May to November and were surprised and pleased with the women workers, most of whom had never been on a farm before. If there was one outstanding characteristic mentioned over and over again by farmers, it was the "intelligence" of the women workers. "You only have to explain a thing to them once and they understand and do it the way you say," was a frequent comment. As the harvest season for one crop after another came along, from early summer to late autumn, many extra women were needed in addition to those who had worked all through the planting and growing season.

2. *Small-Fruit Growers and Orchardists.*—Women had been employed to harvest all sorts of berries and small fruits and wound up the season in the peach and apple orchards, where they were considered more careful and better pickers than ordinary help.

3. *Dairy Farms.*—These farms had employed women all summer, when they could get them, and considered their gentle, quiet handling of cows particularly good and their cleanliness in the dairies outstanding. They would have been glad to keep them on the year round.

4. *Poultry Farms.*—Minute attention to detail is essential on poultry farms, where women were found to be satisfactory workers.

5. *Seed-Growing Farms.*—A large commercial seed grower had used to his entire satisfaction a group of 25 to 30 junior girls to weed, cultivate, and finally harvest the vegetable-seed crops.

THE RECORD FOR 1943

PLANS TO MEET THE 1943 NEEDS

Experiments of 1942.

The first use of nonfarm women in this region was made in 1942. In that year there had been an attempt in several States in this section to recruit nonfarm women for farm work and to persuade farmers to at least give them a trial. Opposition to the use of women was found not only among farmers but among agricultural leaders and farmers' organizations. Some State farm-labor supervisors or county agents, if not actively opposing the movement to use women, did not believe it would work or thought the difficulties attendant on any definite move to use women were too great. In two States, however, Maine and Connecticut, State organizations with State funds (very limited) had been set up. The Women's Emergency Farm Service in Maine under Katharine Potter and the Connecticut Land Army under Mrs. Joseph Alsop had recruited girls and women and placed them on farms, where they had been entirely satisfactory. Two private agencies also were active; the Vermont Land Corps under the leadership of Dorothy Thompson had placed about 50 girls and women on farms, and the "Farm for Freedom" group in New York State under Mrs. Frank Washburn had established a group of college girls at Clermont, N. Y., to work on nearby farms. In all these projects the work of the women and girls had both surprised and pleased the farmers, so that in 1943 they were asking for women in many places.

In addition to these efforts there had been in 1942 women placement officers in the New York and New Jersey U. S. Employment Service who were trying to place women on farms. There was not always sufficiently well organized supervision of placements to secure the standards necessary to success.

Private-Agency Plans of 1943.

In 1943, in addition to the State plans of Maine and Connecticut, other private organizations were eager to "do something," and during the winter months of 1942–43 much preliminary work was done by individuals and agencies who believed women could and should be used to help in the farm-labor shortage. Both to individual farmers and to farm commodity groups the possibility of trying women was proposed. Plans were outlined by which they might be employed, efforts were made to set up something that seemed practical to the farmer, and he was told of the satisfaction expressed by the farmers who had tried women.

The result was that by the spring of 1943 a considerable number of privately organized groups of women for farm work were being set up, as well as a continuation of the two State-sponsored plans, and a fairly large group of farmers were looking for women to help with their work. With work assured, these projects sought recruits largely through colleges, junior colleges, and schools, since large numbers of students and teachers who were known to have time available could be reached easily through such channels. Placement officers at these institutions were deluged with requests for girls to work on farms. Some individual farmers sought recruits for groups to work on their farms. No one could have offered finer or more successful cooperation than the college and school vocational and placement officers in all this work. As there was no one channel through which workers cleared, it resulted in some women who desired work failing to get it, and some projects not having all the workers they desired.

Government-Agency Plans of 1943.

At the end of April Congress appropriated funds and named the Extension Service of the Department of Agriculture as the agency to handle farm labor under the War Food Administration. Within this set-up a Women's Land Army program was to be developed, which was to cooperate with all agencies that could help to recruit women who could work on farms, place the workers, and otherwise supervise this phase of farm labor. Miss Florence L. Hall was named national leader of the Women's Land Army, and Women's Land Army leaders were appointed by the Extension Service in nearly every State. These women worked under the State Farm Labor Supervisor (an Extension Service man in each case) helping with whatever method of utilizing women seemed best in that State.

In most States, plans for using women got under way at once. State leaders generally recognized that it was impossible to provide a sufficient number of women workers from localities adjacent to farms, who would live at home and go to and from work on nearby farms each day. Recruits were sought in large urban areas for units of workers to be set up in localities where suitable housing could be provided and farmers found who were ready to employ women.

The Recruiting of Women.

Recruiting plans were put into effect during June and July. For New York State a contract was made between the Extension Service and the USES by which the latter was to recruit and help to place farm labor. A woman was put in charge of the women's work, with a woman assistant. Press, radio, posters were used to attract women. Descriptive circulars of the different projects and camps were distributed, and women were interviewed and sent out to whichever of a dozen projects might need workers. Women were recruited also for year-round jobs, and for the Farmingdale farm-training school on Long Island.

Other States put out their own publicity through the Extension Service Publicity Department, and recruited for their needs through whatever channels it could devise—press, radio, posters, leaflets, clubs, organizations, industries, YWCA, AWVS, USO, Civilian Defense, lists of rejects of WACs or WAVEs, personal contacts, and so forth. (Schools and colleges were in most cases closed and their vacation workers already enrolled before July.) In this region there were only three States—Massachusetts, Rhode Island, and Delaware—where no work camps for women workers were set up by the Extension Service.

The Interviewing of Women.

Wherever possible, workers were interviewed before being accepted by someone trained for the job, but there was in general very little screening of applicants. Every effort was made to take the glamor out of the job and to present it as work rather than as a vacation. Where recruits applied by mail, interviews were not always possible, which sometimes led to later difficulties. Considering this, there were on the whole a surprisingly small proportion who were complete misfits. On some projects where workers came from a distance without interviews, character references were required, but that was rare.

The Groups of Women Furnishing Recruits.

The Women of Farm Families.

It should be remembered that the women members of farm families always have been and always will be the most important women farm workers. In 1943 they took over not only a tremendous amount of work but often entire managerial responsibility. But it was still impossible for them to carry the entire extra burden of work, and resort had to be made to the help of women who had never before worked on farms. It is the work of these inexperienced "nonfarm" women which this bulletin discusses.

The Nonfarm Women Workers.

As the need for women farm workers made itself known, many nonfarm women and girls came forward to answer the call. They came from many different sources and may be roughly divided into the following groups:

1. Students from women's colleges, junior colleges, and high or preparatory schools, and teachers.
2. Business and professional women other than teachers, including State or Federal employees.
3. Homemakers and unemployed women.
4. Women workers from industries.

The largest contribution probably was made by the student and teacher group. These girls and women, having a long summer vacation during which the majority of them do not plan continuous employment in ordinary times, offered a splendid group from which to draw. Their interest in and enthusiasm for the opportunity to contribute real service in food conservation, a field that attracted them, made them admirable recruits. Their physical condition generally was excellent. They were intelligent and conscientious. The great majority of them were not obliged to count on their summer's earnings for support. These women and girls could and usually did give a fairly long period of service, from one to four months.

The women in professional (other than teaching) and business life who gave up their vacations to work on farms, or who sometimes came to farming after giving up one job and before taking another, were a very important group. Among them were office workers from government and private offices, women from publishing houses and magazine agencies, telephone companies; writers, artists, librarians, lawyers, doctors, scientists, waitresses, manicurists, women from an endless variety of jobs; some were expatriates who had come to this country for refuge. Having been employed, all these women were likely to understand that concentrating on one's job is the primary asset of a good worker. Many of them jumped into their work and did an unexpected amount for the time they were employed. While a period of one or two weeks (the prevailing period for this group) is a short time for a worker either to get into her stride or to be valuable enough to a farmer to earn what might be considered good wages, they did a great deal of work and the farmers were well pleased with the help they gave. Many gave a month, some even more.

In the Northeastern States the war industries were making such increasing demands for women workers that comparatively few women went to farms from industry. When industrial workers had vacations, they unquestionably had many demands on their time. They were not a large factor in the women farm labor in these States, but as more women are laid off in the shifting of war contracts this group may well become more important.

Many women who were not employed—women running their own homes with some free time, women who were employed but were willing to work Sundays, students who during the school term could work occasional days—thousands of these women went out from their own places of abode to work by the day on farms within reach. This work was principally harvesting crops where an emergency need existed for a short time. Unquestionably many crops were saved by this group. Since they had to be recruited from urban centers or college towns where there was a supply of women available, they could only be used on farms near enough to such centers to make transportation feasible. Typical of such services was the work of the American Women's Voluntary Services at Washington, D. C., which sent nearly 700 women during 1943 for "day-haul" work on nearby Maryland farms. The AWVS did all the interviewing of recruits, contacted the farms, arranged transportation, keeping an active program moving all summer. Another example, in one of the western counties of Massachusetts, where the strawberry, asparagus, onion, and potato fields as well as apple orchards all needed harvest hands at a time when colleges and schools were in session, the Women's Land Army leader and the county farm labor supervisors recruited hundreds of girl students for day or part-day work in the spring and fall.

This type of help did not, however, reach farms outside of this fortunate circle and many farmers had to have their help brought within reach of the farms.

FARM WORK AND WORKING CONDITIONS OF 1943

WORK DONE BY WOMEN

Market-Garden or Truck Farms.

Many large farms of this type are located near or within daily trucking distance of large centers of population, and all employ large numbers of workers from the spring planting season to the fall harvest. Some specialize in one, two, or three crops; others grow almost all vegetables; some grow berries and bush fruits; some even have orchards and dairies in addition to their vegetables. On these farms women either worked the whole season or harvested special crops.

The number of women who worked the whole season, or even three or four months of it, was comparatively small, but these women had the satisfaction of seeing the whole cycle from planting to harvesting.

(It must be remembered that up to the end of April there was no organized movement and no Government agency that was urging the use of women on farms.) Women cut seed potatoes. They weeded and thinned on hands and knees tiny seedlings as they came up. Much weeding was done by children, whom the women often supervised. Women pulled the small cabbage, cauliflower, and broccoli plants for transplanting. They planted beans and corn by hand. They did hoeing as the seedlings got bigger. They did cultivating and weeding between rows of spinach and lettuce and other vegetables with scuffle hoe and "shove hoe." They dusted plants with insecticides and fungicides. They helped transplant tomatoes and celery. They pulled and bunched radishes. They nailed vegetable boxes (on rainy days). They cut and bunched asparagus and cut rhubarb.

As strawberries began to ripen, many pickers were needed. Some camps were organized just for the few weeks of berry picking and such work was the only job for these women. Other regions depended on women workers by the day from nearby towns. Berry picking requires quickness and dexterity and most inexperienced workers could not do so much as old timers. Currants, raspberries, blueberries, cranberries—these crops drew workers from such camps as were established and also from nearby towns.

Meantime, early vegetable crops were ripening. Women picked lettuce, spinach, summer squash (a prickly job); they picked, trimmed, and bunched beets and carrots; they picked sweet corn, considered by some farmers as both a heavy job and one that needs experience and judgment in selecting ears of just the right degree of ripeness.

Probably no one job employed more women than picking snap or string beans. Some farms grew nothing but string beans. This meant days lost if it was rainy, for beans cannot be picked when the vines are wet. Though it was monotonous, women did very well at it, one farmer saying, "After I showed them the size of the beans that should be picked and should be left, and how to pull them off without hurting the vines, I did not have to instruct them again nor correct them. They have done an excellent job, far better than the boys have ever done."

Another crop that employed many women was tomatoes. Women did the pruning and tying up of the vines to overhead wires so that only one or two main stems were left to bear fruit. The side shoots or suckers had to be repeatedly broken or cut off—a job that made hands, arms, and legs literally black from green-tomato-vine juice. Later the women picked tomatoes day after day, in what they sometimes called "the jungle," vines were so dense. One of the employers said women were "most useful on work that is not too heavy, but which requires skill and painstaking ability, such as trimming and training trellis tomatoes."

Some women worked all the time in the packing sheds, where the vegetables were stripped, bunched, washed, sorted, and packed. They were regarded as good at this work though there was some comment on a tendency of younger girls to chatter and sing too much where they were working close together. One man had installed a radio to have conversation and music for the workers rather than by them.

As the season advanced into fall women harvested carrots and turnips, picked up onions and potatoes. Farmers who had not employed women earlier in the season now sought their help even from some distance to harvest their crops.

The method generally used in picking vegetables was to pick into a bushel or 5/8-bushel basket and carry it to the end of the row, where a truck picked it up. These baskets were sometimes too heavy for women to carry, weighing from 30 to 50 pounds; sometimes older boys or men carried and loaded them when full. One group of women workers developed a system of carrying the containers on their heads.

There is a considerable opportunity for reengineering many farm jobs so that they can be done an easier way if women are to be used. In fact, one of the employers said, "Some of the girls at times had good suggestions on easier and more efficient ways of doing certain jobs." This rearrangement of work to suit the physical capacity of women has already had official attention in the WAC and is usual in industries employing women for the first time.

Where women were picking into bushel baskets, the suggestion was made to use 1/2-bushel baskets or fill the bushel baskets only one-half full. Another suggestion made by workers was that in picking down a row of summer squash, one girl pick from the vines to right and to left, and another girl come behind with the basket, so that constant setting down and picking up the basket was avoided, and by alternating "picking" and "lugging" the work was less fatiguing. Another improvement was picking from the middle toward the end of the row.

On some of these truck farms girls drove tractors and farm trucks, the latter chiefly on errands or to make deliveries of small loads. Where stock was kept, the women helped with the haying, and operated the hay hoists that unloaded the hay in the lofts, where they did some spreading and treading. They raked with horse rakes, drove trucks loaded with hay, and on one truck and dairy farm two girls and two men made up the team that operated the hay baler as long as there was any hay to cut in the neighborhood.

Few of the market gardeners, however, had such diverting jobs. Most of the work was repetitive and monotonous, and the fact that practically everyone stuck it out shows the seriousness of their purpose. Where farmers can arrange some variety in the work, it will unquestionably add to the morale. The same job all day and every day for weeks becomes very tedious and a change to something else if only for an hour or two during the day brings new energy and interest to the workers.

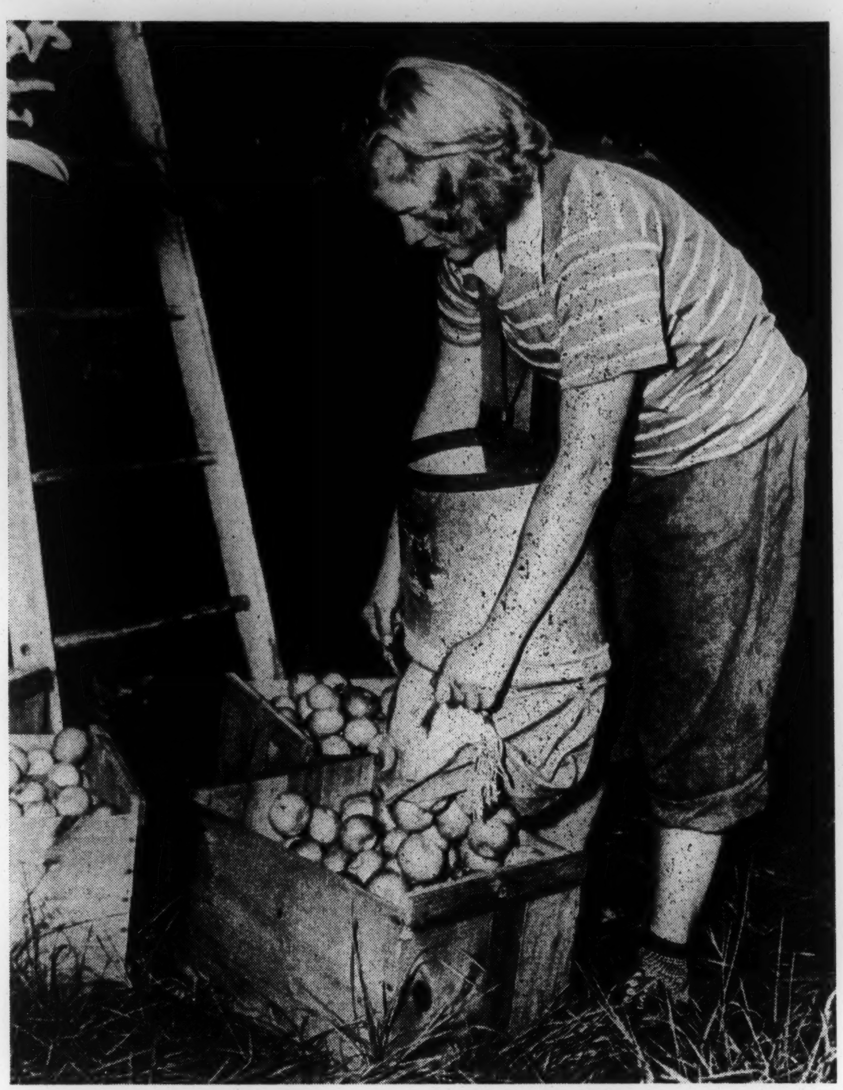
The general attitude of the farmers was one of great satisfaction and surprise that women did so well. Compared to boys of 18 to 20 years they "were more conscientious, made better use of their time, required less supervision, and the quality of their work was better than that of boys." Many farmers said they could not have handled their work without the "girls" and all wanted them back next year. In fact, many said that their planting and production plans were dependent on being able to have their women workers back.

Orchards.

Apples.—In 1943, women really came into the picture in the apple orchards of the Northeast. Harvesting was a great problem and a general call went out for helpers.

Women were sought by newspaper publicity, by Extension Service labor supervisors and Land Army leaders, by the U. S. Employment

Service, and by growers themselves. Many responded. They came out from nearby cities for the day by train, automobile, and farmer's truck. They went from colleges for days and half-days. (Gas was always granted for this work.) In a few instances camps were set up to house women; in some cases they lived on the farms; one way or another they actually did a great deal of the harvesting.



GIRL APPLE-PICKER ON A FRUIT FARM.

The orchardists usually gave them some instruction before starting, explained how to grasp the apple with the blossom end in the palm of the hand, and with the forefinger or thumb against the stem break it off, rather than drag the apple from the tree. The pickers were told that apples must be handled as carefully as eggs, never dropped in baskets or boxes; that baskets must never be dumped into boxes; that apples which dropped from the trees or were knocked off must not be put in with the hand-picked fruit; and so forth.

The prevailing report was that women learned quickly, were intelligent and conscientious, did not break so many fruit spurs as ordinary inexperienced pickers, were more careful in handling fruit and did not bruise many apples. In general, nonfarm women (and men also) did not pick so many bushels a day as regular experienced pickers, but the foreman of one large orchard said, turning to a young married woman who was just walking in from the orchard, "This is our best picker. She can pick right alongside of me, pick just as fast and just as carefully as I can." She had never picked before.

Picking is fairly hard work. Usually ½-bushel or ⅝-bushel baskets or containers are used, and when full they weigh around 25 pounds. Of course, smaller baskets can be used, as they are all emptied into orchard boxes holding about a bushel.

There seemed to be considerable apprehension among growers that women would not be able to climb ladders and could not move nor put up ladders. This certainly was not true of the younger women nor of many of the older ones. They climbed ladders without hesitating; many of the girls climbed like monkeys to the very top. In most cases men moved and set up the ladders, in some the girls scorned any such aid, two girls easily carrying a ladder together and setting it up, after they learned how. Orchard ladders are of various types and lengths. Some start like ordinary ladders and taper off to a point at the top to be more easily poked up into the branches (these ladders may be 14, 16, 18, or 20 feet long); some have three legs, the front like an ordinary stepladder, the back only one leg, like a three-legged easel, so that it can more easily be pushed in among the branches; besides these, the ordinary stepladder and straight ladder sometimes are used. Women should have instruction on how to set up ladders so that they will be secure; as should inexperienced boys and men, for that matter, since they can be just as ignorant about such practices as women.

Previous to harvest time, girls and women had been employed to thin apples, that is, to pick off little apples that either showed some blemish or were crowded too close to other apples. Such thinning insures better fruit, a more valuable crop, but can be practiced only where there is a sufficient labor supply.

Some growers believe, others do not, that women can assist in the spraying. It was rarely done last year. This is a two-man job, one to drive the tractor or spray truck, one to direct the spray nozzle. If an orchard is on level ground, the driving is not difficult. If on steep hills, it is a hard job even for an experienced man. Directing the spray or dusting hose is a heavy, dirty job, but no more so than many factory jobs women are doing. Nevertheless, it probably will be one of the last orchard jobs women will do.

The loading of boxes of picked fruit onto trucks to be carried to the storehouse is a heavy job, boxes weighing about 44 pounds. Girls and women are advised against doing such work continuously, unless two do it together. Much loading was done in 1943, however, by strong active girls in their late teens and twenties.

Nailing boxes is a good job for rainy days during the summer. Many growers buy their boxes knocked down, and put them together on the farm, It is light work, requiring rhythmic, well coordinated movements, and many girls did well at it.

After the crop is picked, the sorting, grading, and packing go on for a large part of the late fall and early winter, since the apples, which are put into storage immediately on being picked, are later taken out, sorted, graded, and packed for sale as they are wanted.

Pruning can be learned by women and one orchardist reported that a 17-year-old girl cut the water sprouts or suckers out of 5 acres of trees.

One of the most important growers in the Northeast said that in his opinion there was practically no job in orcharding for which women could not be employed. Certainly with better organization next season many more women can be used and used more effectively.

Peaches.—In 1943, heavy winter freezes destroyed a great part of the peach crop of the Northeastern States. If that had not been so, many women would have been needed to pick peaches. As it was, small groups of women were organized to pick peaches in Maryland and New Jersey. A Maryland grower reported them as the "best pickers we have ever had in the orchards." This group had been carefully selected for this special job. In New Jersey a peach grower said, "I never sold a nicer crop of peaches—better picked, better graded, or better packed—than I did this year."

In one of these orchards the grower had the women pick in the morning, sort, grade, and pack in the afternoon, which gave the work variety and made it less fatiguing.

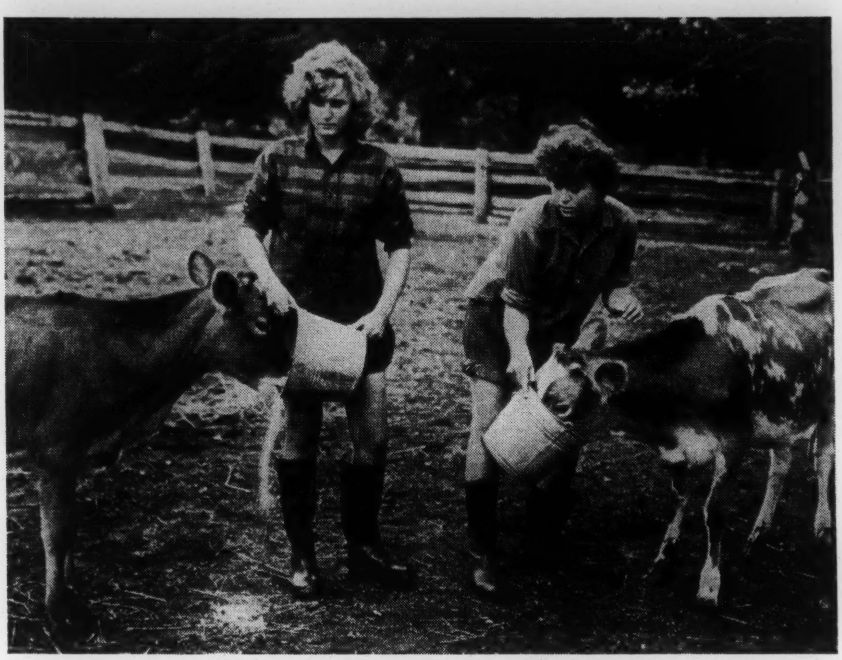
Dairy Farms.

Work on dairy farms required residence at the farm. While there is tremendous need of year-round workers on dairy farms of this region, few women so far have come forward for such jobs. Connecticut, however, reported 8 year-round workers, and there were probably as many if not more in New York. The training school at Farmingdale, L. I., offers a splendid dairy-training course for girls, and while those who took it were readily placed there have not been many women who wanted year-round farm jobs.

Nevertheless, there was a real contribution to dairy farms in the work that women did during the summer months of 1943. Many farms wanted someone to take over the dairy work for the summer and thereby release a man for the heavier outside work. This is exactly what many women did. They were up early in the morning, helped to milk with machines and stripped the cows afterward (stripping is drawing off by hand any milk that remains in the udder after the machines are taken off). Some women also milked entirely by hand. They weighed and recorded the milk production, then took over in the dairy, did the cooling, pasteurizing, and bottling of the milk. If cream was sold, they did the separating; if chocolate milk was sold, they mixed and bottled it. And when these operations were over, they washed and sterilized all the equipment—milking machines, pails, cans, bottles, and separator. This usually was a job that took all the morning.

Some of the dairy work, such as bringing the cans of milk from the barn to the dairy and emptying them into the pasteurizer, was too heavy for women. A full 20-quart can weighs nearly 60 pounds, and a 40-quart can 120 pounds. Two girls together could handle a 20-quart can but men usually did the heavy lifting. Bottling the milk was easy, but stacking up cases of a dozen filled bottles was heavy, and the men usually did the top rows on the small hand trucks. When the work was all done, the dairy was thoroughly washed down; the night's utensils were rinsed and left to be taken care of in the morning.

Both in the cow barn and in the dairy, women were very successful. They were quiet and gentle with the cows, and cows do much better under such handling. Women's cleanliness in the dairy work was outstanding. Their intelligence in learning to operate all the dairy machinery and their conscientiousness in following instructions exactly relieved the farmer of much responsibility. They did not limit their "washing up" to the dairy, but gave the cow barns and windows a thorough scrubbing when needed. They fed and cared for calves.



GIRLS FEEDING CALVES ON A DAIRY FARM.

In the afternoons the dairy-farm workers helped with whatever work was on hand. They planted corn, worked in the vegetable garden, helped with the haying, led the horse for the hay hoist or raked with a horse rake. Sometimes they drove tractors or trucks that hauled hay. They also helped to fill silos, and some cut corn by hand. They tramped and spread ensilage in the silos. Other miscellaneous jobs included setting fence posts, clearing small stones from fields, washing the milk truck, driving the milk route.

On one farm where a married son had been drafted, his wife and another soldier's wife moved in together and one drove the milk route while the other did the dairy work, a half-day job for each.

Quoting one dairy farmer, "The girls at ———— Farms have been very useful in our dairy work, having taken full charge of pasteurizing, separating, cooling, bottling, and keeping the dairy clean and orderly, and helpful in other phases of our farm work. They compare very favorably with young men without previous dairying experience and are very much superior to boys in the 12-to-16 age group." Another dairy farmer reported, "They have been very useful to us in the pasteurizing plant and running the milking machines and have been able to do the work required except the washing of milk cans and lifting of the milk into the pasteurizers. Their strong points have been willingness to do whatever they were asked, cheerfulness, and sticking to the job until it was finished. They are much more intelligent than the boys we have had and have not wasted time or shirked as the boys have a tendency to do."

Poultry Farms.

On the poultry farms there was almost no part of the work that some women did not do. They "trap nested" the laying hens, that is, collected eggs from nests that had closed when the hens entered them, recorded the number of the hen so that a complete record of her egg production could be kept, and then released her. They candled eggs (held them up to a light to see if there were blood spots inside) and graded them by size; packed the eggs collected from the nests in cases; kept the feed hoppers and water receptacles filled. They picked and dressed birds for market—a job started with some repugnance but mastered with some pride. They caponized cockerels. Two women who were biologists were sent to a farm where there were a lot of cockerels to caponize and delighted the farmer by their skill. On any poultry farm there is a multiplicity of detail work. On the hatching farms, which ship day-old chicks, the handling of the incubator eggs, the taking out and boxing the chicks, is a job well suited to women. Except for handling the bags of feed, which weigh 100 pounds, there need be no excessively heavy work on a poultry farm.

While women were desperately needed for year-round work on a good many poultry farms of this region, there was far less success in getting them than there was for summer months or crop-harvest periods.

Seed-Growers' Farms.

The girls employed on one of the seed-growers' farms came from a camp of "junior girls," that is, 15 to 18 years old. They worked an 8-hour day, however, and were very satisfactory. They were chosen on recommendation of their school principals and had a thoroughly serious purpose in signing up for the summer. They worked on the farms under the supervision of working counselors. For the first part of the season they did chiefly the weeding and cultivating of plants being grown for seed. All root and bulb crops take two years to produce seed. They are grown the first year, stored over the winter, planted the second year, during which season the seeds mature and are harvested.

After the seeds ripened, the seed stalks were cut, the seeds stripped off, and here the girls' work ended, the further drying, cleaning, and packaging being carried on in another department of the company.

One of the few agricultural-industry poisonings occurred here, when some of the girls got a slight skin irritation from handling parsnips, known as "parsnip poisoning."

CONDITIONS UNDER WHICH THE 1943 FARM WOMEN WORKED

Safety Practices, Insurance, and Occupational Hazards.

The great majority of the women who worked on farms in 1943 lived elsewhere and came daily to the farms to work. The working conditions discussed in this section relate particularly to the farms as working centers, and not to conditions at farms or camps where the women lived.

Safety Practices.

Except as individual farmers were careful, used precautions themselves and expected their employees to do so, it did not appear that any special safety program for the women workers was initiated. Women did not use machinery to any extent in this region, and except for the few who were trained at Farmingdale, L. I., at the Connecticut or the Maryland agricultural college, or in evening lectures as in Washington, D. C., women workers had had little previous experience in the use of even the ordinary farm tools. There were several cases where girls stuck pitchforks in their feet, fell off trucks or out of hay lofts, or strained their backs, but no serious injury was reported.

Clothing.—Suitable clothing, essential to safety, was generally worn. Blue denim overalls or dungarees, cotton and flannel work shirts, sport shoes, shade hats or caps, rubber boots, raincoats, sweaters, were all part of the essential equipment. The Women's Land Army uniform, overalls, jacket, shirt, and cap, available by August, was well suited to the work. Frequently there was lack of emphasis on suitable protective clothing. Some women or girls went to work in halters and shorts, which are unsuitable because (a) they expose the body unduly to sun and are likely to result in painful sunburns, (b) farming is rough work and shoulders, back, arms, and legs need some protection against bumps, scratches, bruises, and scrapes, (c) country people, traditionally conservative, dislike and comment unfavorably on so much exposure of a woman's body to the general public eye.

Accident Insurance.

Farmers are not required to carry employers' liability insurance. They may, of course, be sued for injuries incurred by an employee in the course of her work. Many farmers did carry such insurance, and some projects—at least one—placed women only on farms so protected. No instance was heard of where women were injured and received, or asked for but did not receive, compensation, but doctor's bills were sometimes paid by the employer.

After the organization of the Women's Land Army program under the Extension Service, accident insurance was offered members at the rate of $4 for a period of three months with the privilege of renewal for additional periods of one to three months, if desired. There was no shorter term. Few workers took this insurance. Where large numbers of workers are transported by trucks back and forth to work, or from one part of a farm to another, transportation accidents, as well as accidents connected with work, may happen.

Occupational Hazards.

Sunburn and Poison Ivy.—The two chief occupational hazards reported by workers throughout the region were, unquestionably, sunburn and poison ivy. As the first is avoidable, and the second largely preventable, it would seem that supervisors, employers, and workers themselves were largely responsible. Many serious cases of sunburn occurred because of eagerness to acquire a deep tan at once. These resulted not only in acute discomfort but in loss of working time. Carelessness and ignorance caused many contacts with poison ivy, which resulted in suffering and loss of time for the worker. Suitable protection against the sun, especially at first when the skin is tender, would have obviated serious sunburn, and thorough instruction in recognition of poison ivy, the trouble it can cause, and the importance of immediate treatment for it, would have greatly lessened the discomfort and lost time occasioned.

Tractors and Machinery.—Girls taught at schools were carefully instructed as to the dangerous and the safe practices in the use of farm machinery and farm tools, and about safe practices with animals; others had instruction on the farms of varying degrees and quality.

The Women's Land Army, various State Extension Offices, and the National Safety Council all issued excellent pamphlets about safety on the farm. These were distributed as widely as possible but did not reach all workers nor all farmer employers.

Sanitary Facilities.

The farms' sanitary facilities for women day workers were not satisfactory. Apparently no provision had been made for such facilities where men workers were employed and no planning was done for women workers. Frequently the number of women employed was too large or their places of work were too far from the farmhouse bathroom for convenience, but no other arrangements were provided. In some cases a nearby family offered the use of their bathroom. Near the farmhouse the girls used whatever toilet the family had, sometimes an outside privy, sometimes the family bathroom. Before another season, if nonfarm women are used in large numbers, this matter must be given attention.

Drinking Water.

Drinking water for workers was another matter given little thought by employers. A jug or an open pail of water, sometimes with ice floating in it, was the usual water supply in the fields. Sometimes a "water boy" refilled the container from time to time. Often all workers drank directly from the jug or from the side of the pail or used a common dipper. Around the packing sheds or farm buildings where there was a hose, workers often drank from the end of the hose. Such methods, banned from industry and all public places long ago, still continue in agriculture. Women were at fault, too, for though given individual tin or flat paper cups they would not bother to use them.

It did not appear that the water supply of the farms where the women worked was questionable, though seldom was there any check on that, but rather that the way it was supplied to the workers was definitely unsanitary. (It should be understood that this discussion is of the drinking water supplied the workers in the fields, not in the farm homes.)

Hours, Rest Periods, Time Off.

Hours of Work.—Where women were housed in groups and hired by the day, week, or month, the hours of work on the farms were 8 or 9 a day: From 7, 7:30, or 8 a. m. to 5 or 5:30 p. m. Where the girls or women lived on the farm, they started work earlier, worked over longer periods, but had more breaks in their work. Some groups of junior girls worked only 6 hours. In many groups where the work depended entirely on good weather conditions, hours were quite irregular, usually less than 8, though 8 was the standard. Ordinarily it was not possible to work longer hours on a day when working conditions were good or make up lost time, because of transportation arrangements. Only very occasionally did women work overtime.

Those living on farms, however, frequently worked late, sometimes well into the evening, getting a truck ready for market, rounding up runaway heifers, or whatever unexpected job called for the whole family's exertions.

While the 8- or 9-hour workday usually meant a day of 10 or 11 hours, and sometimes more, from the time they left home or camp until they got back, the women stood it very well. They were completely exhausted the first few days and exclamations such as, "I was never so tired before in my whole life," "Every muscle in my body aches," were common at evening even among the young and most active. Yet practically nobody quit because of that. An older woman who was obliged to stop and rest for an hour in the shade came back and finished her day's work "to the admiration of the farmer and his wife."

Lunch.—An hour off at noon was universal. Lunch was generally eaten out of doors and gave enough time for some relaxation and rest. There was seldom any effort made to provide a comfortable place to eat lunch; a spot in the nearest shade generally was chosen, or if it was raining, a place in some shed, barn, or greenhouse was sought. Women living in farm families had the customary hot noonday meal indoors, taking the same time.

There was no place where anyone who did not feel well could lie down, though if anyone had been really ill she undoubtedly would have been taken into the farmhouse. There was a lack of knowledge or good judgment on the part of the women as to how to get the most rest from their noon recess, some even using it for active games.

Rest Periods.—Women were, on the whole, free to take short rest periods whenever they felt they needed them, even if working on day rates. In fact, they were told by employers or project supervisors to do so. It was not reported that they abused this privilege, but rather that they were conscientious in the use of their time. For piece work, rest periods might mean curtailment of earnings. Seldom was a fixed rest time set, though one employer initiated four definite rest periods of 15 minutes each, two in the morning and two in the afternoon, and felt that he benefited from them by the increased energy of the workers.

Day of Rest.—The number of days a week worked by day workers living in units was 6, but frequently they were spread over the 7-day week. Some market-garden farms where vegetables had to be picked and packed Sunday for the Monday morning market wanted their workers Sunday mornings. They usually gave them Saturday afternoon off in exchange for Sunday morning or all day Saturday instead of Sunday.

Time Off.—No regular time off was given the women workers, except those living on farms. As the majority were working for short periods only, no time off was expected. Most of the women employed and living on dairy farms had "every other Sunday off after morning chores." When women worked all summer, individual arrangements occasionally were made to permit a day or week end away on specific occasions.

On the whole, women were very conscientious about taking any time off from their farm jobs, and absenteeism was nowhere reported a problem or even an occurrence. Days lost due to illness were rare.

Wages, Rates of Pay, Earnings.

Almost every sort of wage system was found, piece rates, and hourly, daily, weekly, and monthly rates. The amounts varied so greatly that two things were obvious: First, that no one felt quite sure what women were going to be worth, and second, that there was no standard of wages and hours that would assure some profit to the women workers. The fact that in New York State the Farm Bureau raised an hourly rate that had started at 25 cents for adult women to 30 cents and then to a minimum of 40 cents indicates that it realized women's value had been underestimated.

Earnings at Piece and Hourly Rates.

The greater part of the crop harvesting was piece-rate or hourly-rate work, and the rates set up were those that had been fixed for regular harvest hands. No concessions were made to or asked by inexperienced women workers whose principal motive for undertaking farm work was patriotic service. At the start they could not make the pay that old hands could. But it was not only a question of inexperience. They had no chance to make a reasonable wage because they seldom had a full week's work. Women usually were employed as the casual crop harvesters had been: "We won't start picking till Thursday"; "It's too wet to pick today"; "I guess this is all for today"; "Let me have 5 girls Tuesday," was the way many farmers at first regarded their women workers.

At one well organized, well set-up camp where 135 women were employed, the actual days worked amounted to only 69 percent of the days the workers were available. The proportion of women who worked at a loss, that is, did not earn enough to cover the cost of room and board ($10 a week), was 18 percent; these lost an average of $4.48 a week. Average earnings for the week were $12.30, equivalent to $2.99 a day on the basis of days worked but of only $2.05 a day on the basis of days available. Yet these women were workers of whom the farmer said, "I have never had better packers and sorters than these; I wish there were many like them."

At another excellent unit the average daily earnings were $2.42 but the weekly earnings, including days of idleness, were only $10.54. This average was for 58 man-weeks. The highest amount earned in a week was $17.78 and this was the instance of a piece worker on a

48-hour week who picked up potatoes at 7 cents a bushel. At this same unit on a 35-cent hourly rate one girl on a 6-day 48-hour week earned $16.80.

Still another unit of 233 women had average daily earnings (piece and hourly rates) of $2.08. This average was for the whole season and included hourly rates of from 25 to 40 cents. The average weekly earnings for days worked were $9.56, but it was estimated that if the women had been given work for 6 full days their earnings would have averaged $12 to $14.

The foregoing figures were taken from actual pay-roll records. Other camp supervisors reported estimates of average weekly or daily earnings from piece and hourly rates as follows: $1.80 a day for days worked, hours and work irregular; would get $2.80 for an 8-hour day but worked not over 7 hours and days irregular; $15 to $18 a week; $1.35 a day (hours and days irregular); $8.75 to $9 a week, could barely pay board; $14 to $18[3] a week, work was created to keep recruits on hand; $14 a week. Board at these camps, ranging from $8 to $10, was deducted from the pay earned before the worker had anything for herself. At two very small camps picking apples, gross earnings of $24 a week were reported.

The hourly and piece rates from which women derived the foregoing earnings were as follows:

Hourly rates: 25, 30, 35, 40, and very rarely 50 cents an hour.
Piece rates (picking or picking up berries and vegetables):
  Beans: 35 and 50 cents a bushel, 2 cents a pound.
  Apples: 10 and 12 cents a bushel, 12½ to 15 "tops" (picked on ladders
  Blueberries: 7 cents a quart.
  Strawberries: 4, 5, and 6 cents a quart.
  Tomatoes: 9 and 10 cents a ⅝-bushel basket.
  Potatoes: 7 cents a bushel.
  Turnips, carrots, beets: 10 to 13 cents a bushel.
  Peaches: 10 cents a bushel.

Probably beans and tomatoes are the two crops that employed the most women, and much of the work on tomatoes—suckering, tying up, picking, sorting, grading, packing—was done on an hourly rate basis.

One employer, a truck farmer, paid his women workers 50 cents an hour; he brought them from a nearby town, not from a farm unit. He said he had been greatly criticized for his high wages but found that it had paid him.

Earnings at Guaranteed Daily, Weekly, or Monthly Rates.

Turning from the earnings of piece and hourly rate workers to those of persons paid a guaranteed wage, it appears that the latter system prevailed in Maine and in some unit groups in Massachusetts.

In Maine in 1942 the director of the Women's Emergency Farm Service, one of the first State-sponsored organizations for employing nonfarm women on farms, studied the matter of pay carefully and decided that a guaranteed wage, though small, brought far safer earnings than did piece or hourly rates. Accordingly, in 1942 the Maine WEFS workers got $21 a month and board—at that time "Army privates' pay." The girls made good. The farmers wanted more of them in 1943, and were willing to guarantee $30 a month and board (the latter $10 a week) to the Maine WEFS. The employer paid the full amount of wages and board, together amounting to $2.43 a day; $1.43 then was deducted to pay for the worker's board and she herself received the $1 wage. This insured to the worker gross weekly earnings of $17 as long as she worked, and net income of $7 weekly. The junior workers (girls under 18) in 1943 received $21 and board, or daily earnings of $2.13, gross weekly earnings of $14.90, and net of $4.90. They worked an 8-hour day instead of the 9 hours of older workers.

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[3] These higher earnings were on picking peaches or apples.

In Massachusetts three privately organized farm units had guaranteed their workers weekly earnings of $10, $11, and $12, plus their board. These units kept a working force of about 50 from May to September. The Massachusetts State College paid its unit of about 20 workers more than $4 a day; they started at $3 and progressed to the higher rate. This, however, was a State Civil Service rating and was paid from State funds, not by any farmer.

The net income of women who were paid a guaranteed weekly or monthly wage was far greater than that of women paid by the hour or the piece. The average weekly earnings of the workers at one unit, whose work was on market-garden farms, over a period of 14 weeks was $20.65 gross, $10 board to be paid from this amount. The women were paid $3.50 a 9-hour day and had work every day. At other units the averages were $10 and $12 a week, plus board.

Where the women lived and worked on individual farms, they were paid from $30 to $45 a month and board when they were entirely inexperienced, and raised in some cases to $50 after they became more useful. Women with good preliminary dairy training, at Farmingdale, L. I., for example, were reported as starting at $65 with a prospect of a raise within a year to as much as $80 a month and board.

Though the wage figures give little indication of it, vegetable growers in general expressed themselves as satisfied beyond expectation with the women's work. Several said that the women of 25 years of age and up were steadier, more dependable workers than the younger women, except where the latter (18 to 25 years of age) had a serious purpose and remained long enough to really get into the work. In a number of States the Farm Bureau, the Extension Service, and the United States Employment Service, realizing that the irregularity of work was playing havoc with earnings, demanded that the farmers guarantee work for at least 75 percent of the time. This improved the situation but still did not give full-time employment.

No implication is intended in this report that vegetable growers did not want to pay women all they were worth, but rather that at the beginning of the season they had no idea what women were worth. Of their own accord, some farmers raised the pay of certain workers or gave bonuses, which in turn upset the other workers when it became known. The farmer's uncertainty as to the amount of labor that would be required, his lack of provision of other work that could be done when the weather or state of the crop did not permit picking, and his uncertainty as to how much work women could do or how long a day or a week they could work, were all factors influencing earnings that must receive consideration before another season. On the whole, the group of women who came forward for farm work seemed to prefer a standard wage which, of course, carried the understanding that a worker below standard might be dropped.

In New York, New Jersey, and Maryland farmers paid a head tax of 20, 15, or 5 cents a day for each worker, this money going to the Extension Service toward the operating expenses of the units. As the camps could not supply women workers to all the farmers who wanted them, it was considered fair that those who were supplied with help should pay something for the service.

Attitude of Women Workers and Farmers Toward Work and Training.

By far the most important motive that had impelled these nonfarm women to go into farm work was a feeling of obligation to be of service. The necessity for food was something every woman could understand—food was her business. Then, too, the publicity given emphasized the need for short-time harvest hands, and many women who could not give up their regular occupation were willing to give up their vacation time. The idea of spending that time in the country doing something really useful to the war effort had a strong appeal to city women. Many of them craved a change from their routine work. Though always acceptable, the money that might be earned definitely was not a prime motive; nor had the women much idea of the money value of their services at farm work.

Nevertheless, as the season went on the women did feel in many cases that what they earned was not commensurate with their efforts, and they were dissatisfied at times when the various methods and rates of pay brought equally diligent workers very different earnings. They did not find the work too hard nor the daily hours (8 or 9) too long, but they did feel the need of frequent rest periods. The girls decided that the morning hours were the best for work, and the best for heavy work, and they liked to start early, by 7 o'clock. What they craved most of all was some variety in their work, though they realized this was not always possible. They liked being given responsibility; they wanted to be told just how to do things and to be corrected quickly if they were not doing them just right, but they hesitated to reveal their ignorance for fear of being laughed at. They also craved a word of praise if they were doing well. The women were strongly loyal to the farms where they worked and they felt concern and responsibility for the progress of work on those farms. They were willing to work Sundays when necessary; in fact, some said, "We must get the vegetables picked and trucks loaded Sunday for the Monday market." They wanted to be treated just like any other worker on the farm. They established friendly and business-like relations with other workers, and friendly relations with the farm families and their friends. The few exceptions to these prevailing characteristics missed a great opportunity to gain valuable knowledge and experience and to give to the farmers and their families equally valuable contacts.

The farmers, on their part, undoubtedly were skeptical at first as to the usefulness of women workers. They did not like the idea of giving orders to a woman; they were shy before city women and girls who came from entirely different surroundings. They treated the women with consideration beyond that given regular hands; they selected work for them that seemed suitable and that they thought women could do. The farmers had held off from hiring women as long as anyone else was available, and when they had to take women they did it without much planning of how to use the new group efficiently.

This conversation between a farmer's son and one of the women workers is typical: "When my father said he was going to hire female help, I told him I was going to quit." "Do you feel that way now, Bill?" "No, the girls are all right; they're doing a swell job and I'm all for them." As the season wore on and the farmers found the women conscientious and intelligent, willing to work hard and steadily, a mutual respect between employer and employee developed. Women were regarded as definitely a part of the labor staff. Farmers sent them about their various jobs. A supervisor visiting a farm heard the farmer call out to a girl, "Say, Betty, tell Jane to wake up and bring the tractor down to pull in this load of hay." (Jane was snatching a regular few-minutes-after-dinner rest.) By the end of the season the farmers and the women workers were friends looking forward to another season of work together next year.

There were, of course, problems to be solved between farmers and employees, complaints to be straightened out, difficulties to be cleared up; but these were not more numerous nor more serious than occur in any labor force, and the Women's Land Army leaders, their assistants or supervisors of various projects, did a fine and understanding personnel job in these matters.

Training.

The opinion expressed by the farmers as to the desirability of training was varied. Many, and usually they were on vegetable farms, said they preferred to train the workers themselves. Some said preliminary training would have been helpful. All agreed that the same women would be much more useful next year and usually the farmer "would like to have the same women back." Again and again a farmer felt that his special group of workers was "the pick of the lot." Most dairy farmers believed that some training would have made the girls more useful, but admitted that they were so intelligent that they learned quickly. Such work as milking, however, cannot be learned overnight, no matter how intelligent a person may be.

One reason that farmers were disinclined toward training was that they were afraid workers would either (*a*) think they knew it all, or (*b*) have been trained where the equipment was so much better than that of the farmer that the worker might be contemptuous of the things with which the farmer had to work. Little preliminary training had actually been received. Women often were utterly ignorant, even of the names of ordinary tools. They knew vegetables only in their edible parts. The girls' experience with cows, horses, poultry consisted of seeing them from a passing automobile. The processes of planting, cultivating, harvesting, all were unknown to them. They were eager to learn but hesitated to ask questions for fear of ridicule.

The only States that had offered worth-while definite training courses for women were New York, Connecticut, and Maryland.

1. In New York a four-week course at Farmingdale, L. I., gave a splendid grounding in dairy and poultry work, use and care of horses and farm machinery, and general farm practices. This school was open, by arrangement, to women from most of the neighboring States.
2. In Connecticut and Maryland the State agricultural colleges had offered special 2-week courses in dairying or poultry work for women.

These schools had not sufficient applicants to keep running all the time.

The apparent lack of interest in training on the part of the women may have been due to the fact (*a*) they had only a short time to give to farm work and wanted to put in all the time on the farm; (*b*) jobs were waiting for them without any training; and (*c*) if they accepted the free training at these schools, they had to agree to stay at least three months in farm work.

No attempt was made by any State authorities to offer a short series of evening lectures in the large cities fairly close to the time when women might be needed. The American Women's Volunteer Services, in cooperation with the Maryland Extension Service, did hold such meetings in Washington, three evenings a week, just before apple and peach picking.

LIFE AND LIVING CONDITIONS OF THE 1943 WOMEN FARM WORKERS

VARIOUS HOUSING METHODS USED

Unit Plan.

From all accounts the most successful plan by which urban women were made available for farm work was to have a unit of women recruited from any available source and established in some central locality from which they went out each morning to work on nearby farms (mostly market-garden or special-crop farms and orchards), returning to their unit at night. This method had many advantages for the farmer. He had no responsibility at all for the women workers outside of their working hours. He did not have to provide a room that they found adequate, his wife did not have to cook for more people, he and his family did not have to change their habits or mode of living to accommodate a stranger, he had not the responsiblity of providing recreation or supervision. Usually farm families prefer not to take women into their homes. Units of women, established in what is called for convenience a "camp," planned at the request and with the cooperation of the surrounding farmers, furnished as many workers as the farmer needed, whether 2 or 20. The size of the camp group was based on the demand for workers. All the farmer had to do was to call for his crew in the morning and return them at night. If a worker was not satisfactory at one farm, a shift to another farm and another job was tried.

For the girls or women as well, such an arrangement usually was happier. Living conditions were more easily controlled and kept at a definitely understood standard. Food was planned and provided that followed nutrition requirements rather than any one family's eating habits. Companionship of other persons of the same age and actuated by the same motives, the stimulus of meeting other women of varied experience, all tended to weld the group into a loyal cooperating unit. To keep such a unit operating at top efficiency required very able supervision and direction, and the success or failure of such a project often depended on the person at the head of it.

Type of Housing.

Frequently it was difficult to find suitable housing for a unit in the area desired, but the ingenuity and determination shown by the

Women's Land Army leaders and the Extension Service County Farm Labor supervisors demonstrated that no difficulty is insurmountable, as the great variety of housing proved.

Summer Hotels.—In many cases small summer hotels that did not anticipate a large patronage agreed to turn over all or part of their rooms to the farm units. This was easier for the promoters of the unit, in that the hotel proprietor charged for room and board together, no operating personnel was necessary, and the expense to the Extension Service was very small. The girls' wages covered the cost of board (usually $10 a week). For the hotel or camp proprietors, however, the margin of profit was slight, since they were supposed to give the girls hearty and nutritious food as well as comfortable lodging.

Camps.—Summer camps, in attractive rural spots, also made satisfactory bases for units. The arrangements here were in some cases the same as with the hotels and in other cases the camps were rented outright, the rent being paid by the Extension Service and the operating personnel put in by that Service.

Tourist Cabins.—In few instances were tourist cabins utilized. Usually they were not in strategic locations, but some very attractive ones were found that were conveniently situated. Here too the proprietor made a flat rate for room and board.

Tent Camps.—In Connecticut the lack of suitable buildings was overcome by using a small inn for dining and living quarters and having the workers sleep in regular army tents. As the season was very dry, this arrangement was satisfactory to the workers. Board and lodging cost $8.50 a week.

Market Building.—In one New York case buildings put up for a regional market a few years ago were entirely rearranged for a unit of about 50 girls. Wallboard partitions were put up, double-deck bunks with springs and mattresses put in, showers with hot and cold water, additional washbowls and toilets installed. The accommodations were very simple but the girls were satisfied. Meals were served in a cafeteria in the basement, originally planned to feed the farmers coming to market. Board and lodging was $10 a week.

Grange Hall.—Another New York unit was housed in a grange hall, remodeled at considerable expense by the Extension Service. Here, too, board and lodging was $10.

Chautauqua Conference Camp Grounds.—The Chautauqua Conference Camp grounds, with cottages and central dining hall, tennis courts, bathing beaches, and other recreational facilities, were offered for farm workers. Board and lodging was $10.

Girl Scout Camp.—The Girl Scout Council of New York offered to house and supervise a unit at their girls' camp, "Camp Wendy." Here Girl Scouts and other workers lived in tents, with real camp living, outside latrines, showers with hot and cold water. Board and lodging here also was $10.

Farmingdale School.—Dormitories housed a unit working on Long Island. The school dining room fed them, and the dormitory house mother had the supervision of the unit.

Summer Cottages.—A group of three furnished summer cottages on the beach at Shelter Island, off Long Island, offered particularly pleasant housing for a unit working on nearby farms.

Country Club in New Jersey.—The Extension Service took over and rented a country club house and housed a unit of 50 women there. The Service engaged and paid cooks, helpers, and directors and was responsible for the camp. Board and lodging was $10.

Boys' Summer Camp.—In Maryland a boys' summer camp was rented by the Extension Service and run as a joint camp for Victory Farm Volunteers (junior workers) and the Women's Land Army. It had recreational facilities besides board and lodging.

Private Country Home.—In Massachusetts the use of a private country home, fully equipped, was given free to a unit of 15 college girls. Board, lodging, and transportation cost $10 a week.

College Fraternity House.—A group of college girls working on a State farm rented a college fraternity house. They divided the weekly expenses for board and lodging, paying $2 each for room and prorating food costs.

Private School Buildings.—Finely equipped school dormitories and dining and recreation halls were rented for a nominal sum to the Unitarian Service Camp, for a unit of girls and boys in Massachusetts.

The examples cited show the wide range of housing facilities. Some were very primitive; some were the height of comfort. Accommodations did not seem to make much difference to the workers, however, if the camp was clean, sanitary, and well run.

Sleeping Rooms.

Workers usually had cot beds with two to four persons in a room, but in some cases dormitories had as many as 20 cots. Whether or not there was closet or bureau space depended on the type of housing. Private homes or hotels had such equipment; tents, obviously none, but women used hooks and boxes for their clothes and toilet articles. Workers almost always took care of their own rooms. At most units the workers brought their own sheets, pillow cases, and towels and in many cases their own blankets.

Living Rooms.

Some units had very pleasant living rooms for the exclusive use of the workers, others shared rooms with hotel guests, others had little or no space outside of their rooms.

Plumbing.

Almost all group units had modern plumbing facilities, with hot and cold water. The number of bathrooms, toilets, showers, tubs, was not always adequate and the amount of hot water available for baths was seldom enough. Care of the bathrooms and the house in general usually was a matter for committees of workers to apportion.

Financing.

The Extension Service undertook to finance the rental and equipment of these camps in most States. In other cases the workers paid by their weekly board the entire cost, and in still others private organizations or individuals made the camps possible.

Farm Resident Plan.

The chief alternative to the unit plan was to have the workers live with the farm family. This was done to a greater or less extent in all States but probably more in Maine, Vermont, Connecticut, and New York, which were a year ahead of the other States in their experiments with women for farm work. New York, after the establishment of the training school at Farmingdale, L. I., placed its graduates in farm homes without difficulty.

Residence on the farm was almost essential for those who worked on dairy farms. Usually, if there were two workers they shared a room, and sometimes a bed, though separate beds generally were available. As members of the household, they adopted family habits. If there was no running water, they used bowls and pitchers or washed at the kitchen sink. Some farms had well equipped bathrooms, some had outside privies. Many bedrooms had no heat, not a disadvantage in summer but chilly in fall or winter. The farm workers shared the family living room, and were made part of the family plans. The farmer's wife frequently did the girls' washing. They, in turn, helped her with the dishes.

The girls or women who lived on farms went there of their own choice. They felt that the experience and their contact with farm life was more real if they lived on a farm, and for the most part they wanted to do dairy work as well as crop work. Putting girls or women into a farm family that has established habits and standards requires very careful adjustment. Not only the farmer but his wife and the whole family must have a cooperative attitude to make the experiment successful, and the girls or women so placed must be equally cooperative and anxious to fit themselves into their new environment with the least possible disturbance to the farm family.

Such arrangements frequently worked out most happily. The girls or women gave something to the farm families by their presence that was valued and appreciated in addition to their labor. Farm families gave to the girls or women an experience of great value never to be forgotten. On the other hand, there were instances where girls adjusted themselves very badly to the farm families or where the families failed by their attitude and lack of understanding to make the experiment a success. The degree of success of these placements of women in farm families depended to a great extent on a thorough knowledge both of the farmer and his family and of the worker by the one who made the placement.

Individual-Farm-Unit Plans.

Individual farm units were found less frequently. There were, however, some individual farmers who wanted to employ women and, without help from outside, through their own energy and interest made over buildings on their land or rented and equipped adjacent buildings as housing for women workers. Such farmers also provided the board and gave some oversight to the welfare and recreation of their workers. For the most part they did their own recruiting, largely through schools and colleges. In some instances the workers were paid a wage that included board, in others a wage from which they paid the actual cost of their food and the employer contributed the rent. This method unquestionably puts a much heavier burden and expense on the employer. There is little doubt that if he could have been assured of the necessary supply of women workers when he needed them, he would have preferred to pay their wages and have no further responsibility.

One of the outstanding housing set-ups of the whole region was, nevertheless, just such a unit. A market-gardener who had not only considerable acreage of truck crops but a good-sized dairy herd had living with his family a sister, of much experience with girls both as a teacher and as the head of girls' summer camps. This woman undertook to recruit, house, and feed a unit of 16 girls from May to November to work on the farm. A vacant farmhouse "next door," with plumbing and electricity, was rented and equipped, simply but adequately; recruits were sought at colleges and junior colleges; a fixed rate of pay over and above board was offered ($10 a week). A dining room at the home farm was assigned to the girls, the home-farm living room was available, the farmer's sister and mother saw that good and ample food was provided, interested and intelligent supervision was exercised, and a succession of workers kept a force of 16 girls on that farm from May to November with applicants turned away every month and girls registering already for 1944.

Inspection of Housing.

As has been said, in the camps set up by the Women's Land Army leaders and the Extension Service, or by private groups, the sanitary provisions generally were acceptable, though frequently there was an insufficient number of bathrooms and an inadequate supply of hot water for bathing. The Connecticut Women's Land Army leader had all buildings that were being considered for housing units of women inspected by State or local health authorities and recommendations made that the Women's Land Army carried out to bring them to acceptable standards. Unquestionably this was a wise move.

In New York the Farm Labor Division of the United States Employment Service sent their woman representative to inspect the housing that had been suggested by the county farm labor representatives or other cooperating agencies and that had to conform to local health regulations. In Maine the Women's Land Army supervisor personally made all the selection of camps and housing for the groups of women. In Vermont and New Hampshire the Women's Land Army leaders approved the housing used. In Maryland, New Jersey, and Pennsylvania the Women's Land Army and the Extension Service took all responsibility for the large camps they operated and saw that everything was up to standard. In Rhode Island, Delaware, and Massachusetts, no camps for women were set up by the Women's Land Army and the Extension Service.

In general it may be considered that the housing and sanitary facilities of women working on farms in 1943 were far better than those of 1942, when some of the camp set-ups offered by individual farmers to patriotic women who went to work from a desire to help were far below any standards of comfort or adequacy.

FOOD PROVISION FOR WOMEN WORKERS

Women in Camps.

The units of women and girls living in camps of various sorts were usually fed in one of two ways:

1. The summer camps or hotels that were leased to house units undertook to both house and feed the workers at a fixed price, usually $10 a week.

2. The Extension Service (or whatever organization was financially responsible for the unit) rented quarters for living, then hired a cook

and put in a supervisor to have charge of planning meals, buying food, and so forth. Sometimes in very small groups one person held both these jobs, but this was rare.

The first method was by far the easier for those organizing the camp. But it seems doubtful whether $10 a week could cover adequate food, lodging, and general overhead and still yield sufficient profit to those running a commercial hotel or camp to encourage them to continue if other guests were available. The fear of a guestless season for their resort in the summer of 1943 was the reason that impelled most of them to make such arrangements. Furthermore, the small charge made it necessary to watch food bills very closely. In no cases reviewed were the girls underfed, but neither could much supervision be exercised over what commercial hotels supplied them.

The second and more usual plan was to have the Extension Service provide and pay for the housing for the unit, pay the supervisors, and try to make the food and operating costs come out of the money paid for "board" by the workers, which thus was not the actual cost of board and lodging but was what seemed to be a fair rate to charge the worker.

In a few camps, board and lodging was $8 or $8.50 a week; nowhere was more than $10 paid. In one very small cooperative group only 50 cents a day was charged. According to the State leader, "This small charge was possible because the woman heading the project is a wonderful cook and economizer, with extensive experience in stretching the dollar."

The breakfast given the girls at camps usually consisted of some kind of fruit, cereal and milk, milk or coffee to drink, with toast and butter or more often margarine; sometimes eggs in some form or bacon or french toast was provided, but not so generally as is desirable for hard physical work. The tendency of young people to be late in getting up and then to rush through breakfast so as to be ready for work had to be guarded against. When they did that, they were sure to be hungry before noon and sometimes were known to eat their lunch in midmorning to appease their hunger.

Lunch varied from simple sandwiches (to which farmers sometimes contributed milk) to fruit, milk, sandwiches, and cookies or cake. Especially at first, girls were inclined to eat very heartily, and the number of sandwiches provided often was at the request of the individual. Lunch generally was eaten out of doors and a full hour was allowed, which gave time for at least 15 minutes of relaxation or complete rest for those wise enough to take it.

Dinner on return from work was the hearty meal of the day. While this was contrary to general farm practice, it was in line with the food habits of most of the workers. Effort was made to provide meat several times a week, fish and poultry, soups, vegetables and salads, and such simple desserts as could be made from available materials. Good food at a low price was not easily obtained for large groups, nor were good cooks. In fact, securing a good cook was solving half the problem of assuring the success of the project.

Women in Farm Families.

One of the difficulties of placing women in farm households was that family food habits were likely to be very different from those of the city worker. For one thing, the worker had to adapt herself to a much more starchy diet than had been her custom. In some cases the food was much less satisfactory than in the units; in others, where the farm family believed in feeding themselves well, it may have been better. What it cost a farm wife to board a worker is hard to say, but judging from the costs of feeding units, the same sort of food should not have cost the farm wife more than $5 a week, leaving her at least $5 for her time, overhead, and room rent.

TRANSPORTATION

Almost without exception the farmers employing women from the units housed in camps called there each morning to get their workers and took them back at night. Farmers have been accustomed to getting young workers from nearby towns or cities in this way, and make no objection because it is considered a necessary part of their work. It can be quite expensive. One man figured that to transport boys from a nearby city in 1942 had cost him, in the use of his trucks, $1,500. Getting women from a much nearer unit, he figured, would save him hundreds of dollars as well as give him better help. The distance from the camps to the farms ranged from 3 or 4 miles to 25, occasionally more, but usually not over 10 or 12. Long hauls, if they took 20 or 25 workers to one farm, were not considered a hardship. One farmer who badly needed a group of women to pick up potatoes got a bus and took them 35 miles, the girls paying part of the cost. Usually the farmer's passenger car or farm trucks were used.

HEALTH PROVISIONS

In the State and privately organized projects, women who worked on farms and lived either in units at camps or on individual farms were required to have a doctor's certificate of physical fitness and freedom from communicable disease. This precaution was not required in the case of workers who went from home by the day. The matter was important, for farmers hesitated to give women work that might be "too heavy," and with no assurance of their physical condition sometimes held them off from work they could have done perfectly well, or put them on work that might have overtaxed them. Individuals cannot be sure of their own condition without some check. If anyone has a communicable or infectious disease, other workers living in the same camps should not be exposed to it.

The chief objections to a physical examination were that—

1. Women did not want the bother or expense of it.
2. Doctors were so busy that it was sometimes hard to get hold of them at a time when a prospective worker could consult them.

Nevertheless, the projects that did require it did not state that they had lost recruits because of the provision. A certificate of health was easy to secure for college and school students, the school doctors being able to give it. Other workers had to secure theirs from individual doctors, there being no provision by the Government for such certification.

The Women's Land Army requires that all women or girls going to camp or to farm homes for farm work should first secure the certificate of physical fitness and freedom from communicable disease that the Land Army offers. (For form see p. 34.)

All unit projects had first-aid kits and persons qualified to administer treatment. For other medical care local doctors were consulted. No special provision was made for caring for or isolating illness that needed nursing care; and so far as camps were reviewed, there were no arrangements for having a trained nurse on the job.

RECREATION

One of the problems that demand attention if women are to continue in agricultural work is that of providing diversion and recreation for the young women. Those who are the most capable workers, as a group, and those who are able to give the longest periods of service are young women not yet tied down by home responsibilities and family cares. They naturally crave recreation. If they are to work for long periods in fairly remote country regions, they must have companionship of their own age, some opportunities of getting away from their work and having "fun." This is true also of the older women, though not to the same extent.

Projects equipped to provide recreation at the camp, or that made it possible to go to nearby towns or to get away for an occasional week end, were much more likely to keep their group of workers contented and have a smaller turn-over or labor loss than those where it was all work, low pay, and little opportunity for play. Projects that had swimming places had the most healthful and most popular recreation. Communities where some interest was shown in the girls and some recognition given of their contribution by efforts to make things pleasant for them were not common. Here again local people watched to see what these women would be like. Some farmers arranged picnics or corn roasts, or made a point, if the project was remote from a town, of transporting workers to a movie once a week. On some projects workers could have friends visit occasionally. Diversions such as these made for contentment.

The girls at camps found resources of their own. They played cards, did group singing, played victrola records, and so forth. Where local amusements were offered, such as movies or bowling, these were regularly patronized. Some workers had a chance to go to grange suppers or community dances. Those who were living on farms went to town with the farm families Saturday nights, took in a movie, and stopped for sodas or ice cream. One of the outings that gave market-garden workers the most pleasure was to go to market with the truck load of vegetables, see their vegetables sold, and watch the whole procedure of marketing farm produce. This was not only recreational but educational, and most farmers were very willing to take their workers, as opportunity offered, on these trips.

It is true, also, that the girls and women who worked on farms cheerfully, willingly, and with a gay spirit contributed materially to the general morale of the farm staff. One farmer's wife said, "I do believe the men enjoyed having the girls around and will miss them when they go."

CONCLUSION: ADVISABLE PRACTICES FOR 1944 SUGGESTED BY STUDY OF THE 1943 PROGRAM

SUPERVISION

The most important conclusion reached relating to the employment of nonfarm women on farms is that adequate leadership and supervision by well qualified women should be provided all along the way. Endless and unforeseen problems crop up in any new field of employment of women, and when such new employment entails not only working conditions but living and social conditions, guidance from someone with wide experience with women and girls as well as with employment problems is needed.

One of the problems that plagued the early advocates of women for farm work, as well as the prospective employers and employees, was where the women were going to live and who was going to "look after" them. The experience of 1943 showed without question that adequate supervision is an essential feature of any program involving women farm workers, and this was one reason why women leaders both in the over-all State programs and in the supervision of individual camps or projects were such an important factor. In recruiting girl students from schools or colleges, the authorities at these institutions wanted first of all to know who was the responsible head of such projects and just what were the conditions under which the girls and women would live, work, and play. They would not recruit their students until they were satisfied that the project would be well organized and well managed. Women who were "on their own" also wanted to know something about what they were going into. Obviously, if girls or women are going to live in a farm family and work on an individual farm they should have some guarantee of the health, character, and standards of the family with whom they will be thrown so intimately. Parents will insist on this. Farm families also should know something about the health and character of the women or girls who are to be taken into their homes as members of the family, for the women who go to work and live on farms occupy a different place from many of the "hired men," who often live quite apart and in no way share the family life.

Where the recruiting, placement, and general supervision of the women were the job of the State leader of the Women's Land Army, she took the responsibility of passing on these matters. Where the responsibility was given to or shared with men placement officers and labor supervisors, it usually was found advisable to have close cooperation with the women leaders.

When women State leaders were able to give only part time to this work during the year (and only two had assistants) it is obvious that in 1943 they could make only a beginning of what they wanted to do.

The job of passing on the suitability of living quarters was one that needed women's judgment as well as men's judgment. A thorough knowledge and sympathetic understanding of girls and women by the State leader played an important part in their successful employment in 1943. Some of the jobs that had to be done were these:

To find farmers who would employ women.
To find suitable housing for women workers.
To see that suitable camp equipment was found and installed.
To see that sanitary provisions met health requirements and were adequate.
To see that cooks and supervisors were ready when the camp opened.
To provide for some recreation program.
To arrange for meeting new arrivals and transporting them to camp.
To see that the general morale of the camp was kept up.
To watch the health of the workers and see that they did not get overtired.
To see that reasonable camp rules were set up and maintained by the workers themselves.
To see that good, substantial, well-balanced food was provided.
To see that the workers had enough work to more than cover expenses.

These jobs are essentially women's jobs. Just as the personnel offices dealing with women in industry have more and more come to realize that they must have women personnel officers to help in handling women's problems, so the farm-labor men will realize that where women come into the farm-labor picture they need the help of women leaders and the kind of supervision that women alone can give. Each separate camp or project needs a woman supervisor who will give full time to her project as long as it is running, and on the quality of this supervision depends to a considerable extent the success of the project.

If 1944 goals are to be met, every Women's Land Army leader must be given the opportunity to put all her effort into this work with such assistants as she may require.

FARM WORK AND SEASONS FOR WHICH WOMEN WILL BE NEEDED

In 1944 the need for women farm workers will exist in both these divisions of farm work:

1. Farm work that goes on throughout the year.
2. Farm work that has to be done during only part of the year.

The latter may be divided again into—

(a) Long-season work covering the growing and harvesting periods for all crops. In the Northeastern States this season lasts from March to November.

(b) Short-season harvesting periods; that is, as each crop matures, extra hands are needed to harvest it for periods of 2 to 6 weeks or longer.

1. The year-round work naturally has to do with animals. The greatest need for help exists on dairy farms. Where girls or women have taken up such work, they have been very successful. Any girl or woman who likes animals can find ready employment at wages which, with board included, are comparable to those of the industrial worker. The number of women in such jobs in 1943 was small but the need is great and increasing. Training with all expenses paid is provided.

2. The seasonal work should not be considered as simply picking various crops, but as—

(a) *Long-season work*, during which market-gardeners who grow a variety of crops from early spring to late fall need workers the entire season. These workers shift from one job to another, taking part in planting, cultivating, harvesting, and marketing. Orchardists have work all through a long season—spraying, thinning, box nailing, picking, and finally sorting, grading, and packing. General farms and dairy farms always take on extra help in the summer for haying, a hard job, but here a woman could release a regular hand for this heavy work by taking over some dairy work.

(b) *The harvest work*, the time when many workers are needed for a short period to cut asparagus; to pick strawberries, currants, raspberries, blueberries, grapes, cranberries; to harvest string beans, tomatoes, spinach, lettuce, carrots, beets, beans, onions, potatoes, peaches, pears, apples, comes to a small extent in spring and early summer but principally from mid-July on, lasting into November.

With this range of occupations and seasons any woman who is willing to make herself responsible for a share in this essential job can pretty well pick her time and place.

Students and Teachers.—Students and teachers can utilize their summer vacations for the long-season work on market-garden, dairy, or general farms. The longer a worker stays the more valuable she becomes to her employer.

Vacation Workers from Business.—Workers from business, professional, and industrial occupations can apply their vacations to crop harvesting. By concentrating on one job a certain amount of necessary skill can be acquired in a shorter time than if one is trying to learn a dozen jobs. (It is not, of course, so much fun as a variety of jobs, but fun is not the primary object.) If there is a choice of vacation period, workers can find out at what time they will be most needed and if possible fit their plans to the need. If they have no choice, they can make known the time they would be available and leave the assignment to the State Women's Land Army leader or the agency assigned to have charge of recruiting.

QUALIFICATIONS OF A SUCCESSFUL WOMAN FARM WORKER

Anyone who loves outdoor life and work, who likes animals and the country, starts out on farm work with a big advantage. As many city women do not know whether or not they like such things, never having tried them, it is well to consider their other qualifications.

First-class physical condition is the most important qualification of a successful farm worker because the work is primarily physical. This does not mean that the worker must be an athlete in her early twenties, but any inexperienced, nonfarm girl or woman undertaking continuous outdoor work over a period of weeks or months should be sure she is in good physical condition and has the endurance to stand it. Farmers should have the assurance that women sent to them can stand the work. The only means of furnishing such assurance to both parties is a doctor's certificate of physical fitness and freedom from communicable disease. It is earnestly recommended that this be a requirement of all women recruited for working groups under Government or private supervision, or placed by Government or other agencies on individual farms. If girls or women choose to go from their own homes for day or part-day work, or if they find farm jobs and take them on their own responsibility, no one can prevent it; but it then becomes a responsibility shared by the worker and the farmer and they alone can be blamed for any disastrous effects that may result.

At the request of Miss Florence L. Hall, Chief of the Women's Land Army, and after consultation with doctors and health authorities, the Women's Bureau prepared the following certificate of health and physical fitness to be used by prospective farm workers, covering the essential points simply and briefly. Such a statement is necessary not only for the protection of the worker but for the protection of those with whom she works. Passing a physical examination is required of women workers in many war industries as well as in the various Service organizations.

PHYSICAL EXAMINATION RECORD[1]

Applicants for Women's Land Army

Check
Single Widowed
Married Divorced

____
(Last name) (First name) (Middle name) (Age) (Color)

____
(Home address) (City) (County) (State)

I. Medical history: (To be filled out by applicant)

a. Check any contagious diseases you have had:
Measles Whooping cough Scarlet fever Diphtheria Typhoid
b. Have you had rheumatic fever?________
c. Have you had tuberculosis?________
d. Have you had a severe illness or major operation recently?________
____
e. State difficulty with monthly periods________
____
f. Do you have hay fever or asthma?________

II. Medical examination: (To be filled out by licensed physician)

a. Has applicant detectable heart disease?________
Blood pressure if applicant is over 40 years of age________
b. List any course of immunization, particularly tetanus antitoxin________
____
c. List any abnormal physical findings of:
1. Mouth (teeth and gums)________
2. Throat ________
3. Lungs ________
4. Skin ________
5. Extremities (joint mobility, varicose veins, foot strains)________
____
d. Does applicant appear emotionally stable?________
____
e. Do you advise this applicant to do farm work? Yes________ No________
f. Do you see any cause for restriction of any activity?________
____
____

Height________________ Weight________________
Date________________ ________________
(Signature of licensed physician)

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[1] Developed in cooperation with the Women's Bureau, U. S. Department of Labor.

Adaptability is perhaps next in importance to physical fitness. For most women farm work means an entirely new environment. If they are to live and work with a group or on an individual farm, they must be able to fit themselves into a group or family without upsetting themselves, the group, or the family. They must be emotionally stable, able to get along with other people, to submerge their individual likes and dislikes, and above all to refrain from criticism of people or things, especially in the first week or two. (After that, they may find their criticism vanishing.) If there are matters that after careful consideration call for remedy, these should be taken up with the organization supervisor. Tact, consideration for others, and a good sense of humor all help to make one adaptable.

Dependability and conscientiousness are two characteristics that help any worker in any job. They are also two that have been generally praised by the farmers; "the women could be counted on and stuck to their work conscientiously." To preserve that reputation should be the goal of every woman worker. Add to it self-reliance, persistence, desire to learn the whys and wherefores of the job, top it off with a little imagination, and you have a prize.

Ability to concentrate—that is, knowing how to work steadily, being able to stick to a job persistently—will rate anyone as a "good worker." And concentration includes such obvious things as that too much conversation while at work cannot be indulged in.

Ability to work without praise is important. It is generally admitted that women, especially beginners in any new job, do better with the stimulus of commendation. It is equally true that farmers usually are men of few words, and are not given to commendation to a person's face. Workers need not expect praise, even when they know they have done a good job. If they do get a "well done" it means something. (They will probably be told if they do things wrong.)

Desire for service is a stimulus and a challenge. Almost all girls or women who take a job on a farm are actuated by a real desire to be of service in the war emergency and a sense of obligation to contribute all they can. But they must remember that, having assumed such obligation in a very essential field, they must do their utmost to make their contribution worth while and not take the attitude that simply by going to a farm they are being patriotic. There is no place on a farm now for women who go for a lark, for a vacation, or to be able to say they have worked on a farm. The real workers will find that they are doing a vitally important job and are also learning much about a vitally important industry.

QUALIFICATIONS OF A SUCCESSFUL EMPLOYER

The employer who has always been successful with his help, who in normal times could always get and keep help, will have practically no trouble with girls and women provided he will draw a little on his stock of patience. There are, however, some points about nonfarm women workers that he will do well to remember and heed.

1. He should instruct his workers carefully and thoroughly at the start and encourage them to ask questions, since most of them know nothing at all about farming. He may be, at first, not at ease with the women, and they in turn undoubtedly feel awkward and embar-

rassed by their ignorance and a little afraid of him. They dread being laughed at or held in contempt (as they often are) by experienced workers, male or female. If the farmer will take time to explain what he wants them to do, to give them a little idea of his farming operations, even take them over as much of it as he can; if he will instruct them by word and by demonstration in the work they are to do; if he will take a hoe, explain its use, show them how to hold it and use it properly, not just tell them to "start hoeing cabbages"; if he will show them how to pick beans clean and tell them why every bean that is ready must be picked or it will be too big at the next picking; if he will make them feel free to ask questions, and will answer them seriously no matter how foolish they sound, he will be repaid many times over. Men who appreciate the difficulties of green women workers and give them a good induction period (and there have been many fine examples of this) have far less trouble with poor work.

2. The farmer should have a cooperative attitude, make the women feel that they are working with him for a common goal—food production. If an employer holds this attitude he will get loyalty, responsibility, and concern for his particular needs.

3. He must give an occasional word of encouragement or praise for good work. Women definitely need and respond to an expression of appreciation of their efforts to a far greater extent than men do, and in a new enterprise they are most anxious to know whether or not they are making good. If there are those that are lazy or slackers, a comparison of their output with that of good workers may improve matters; if they are no good, they should not be kept on.

4. Ability to study the capacity of his workers and find out which ones are best suited for which jobs is important. On one farm, of a number of women workers who tried to manage and supervise a group of young weeders, only one was successful. She did it so well that the whole job, including hiring and firing, was turned over to her, with wholly satisfactory results.

5. He must have consideration for the health and safety and the comfort of his women workers. There are many and varied hazards on a farm. Workers should be warned of those that they may incur at their particular place of employment. As for their health, too long hours or too heavy work are the chief dangers against which the employer must guard. Little personal attentions, such as cool drinks on a very hot day, or a treat of some sort, bring rewards far beyond any effort or cost they may entail.

6. Finally, the farmer must be willing to pay the women as much as he would pay any man for comparable work. If he pays good wages, he may demand and expect good work.

EMPLOYMENT CONDITIONS

Women's Wages.

The question of women's pay is one that must be given careful consideration this winter if the employment of women is to continue and to expand. Women who go into farm work are not out after "big money." They realize that, come what may, America and the families and children of her allies must have food. They are willing to work for moderate pay. But they cannot be recruited, for harvest or for long-season farm work, on the old basis of migratory workers who were expected to come when wanted, to work and be paid for only such days or hours as they were needed and sit around in idleness the rest of the time. They must earn sufficient to pay their board and expenses and something over. If the women do any given job as well as men, they should have the same pay, or if, because of what they can do, they replace a man, they should have the same pay. On the farmers who have employed women, on the State Land Army leaders and the State labor supervisors of the Extension Service, on the project directors who know the women's problems most intimately, on the officers of Farm Bureau, the Grange, and farmers' commodity associations, all of whom have been instrumental in seeing such projects successfully carried through—on all these people, but chiefly on the farmers themselves, rests the responsibility of getting together this winter of 1943–44 and working out a plan of payment that will be satisfactory to all.

It should not be forgotten that there is a farmers' side to the pay proposition. Some women paid an hourly rate may not do enough work to earn it, or if they are paid a piece rate they may do so little work that they do not earn enough to satisfy themselves. These individual problems exist wherever men or women are employed; they are not peculiar to farming. No farmer need keep workers who are much below average in performance. Instances have been reported where a woman who did not do well on one farm made an entirely satisfactory record when shifted to another with a different type of work.

Women do not want the farmer to keep them on out of kindness to them, or because he doesn't want to hurt their feelings; nor do they want to work out of kindness to the farmer because he cannot afford to pay them. The laborer should be worthy of her hire and well managed farming should be able to pay decent wages.

The piece rate should be such that the average industrious worker can earn what is judged to be an amount fair to the worker and to the industry. The hourly rate should have the same aim—the worker should earn in an hour about the same amount as the average piece-rate worker. Unless the work is all on one crop, the hourly rate is much simpler and probably better on the whole for women.

The guaranteed daily, weekly, or monthly wage seemed to work out still more satisfactorily for women. There was very little complaint of women's loafing on the job. Since this is emergency work for women, with service an important factor, a uniform rate of pay for all, which insures expenses and a fair amount over, would seem the best system of pay for volunteer women workers.

It is unquestionably true that no women (or new workers in any job) are worth as much the first week as they are after they have got the hang of the job and their "second wind" physically.

A beginner's rate for the first week, with an increase thereafter, might offer an incentive to workers to acquire skill and proficiency. Farmers must remember that "patriotic service" needs a fair financial reward to keep functioning, and workers who earn barely enough to pay their board will not keep on working indefinitely.

Where women lived on the farms they were paid $30, $45, $50, and sometimes more, a month, plus their board. Women who had received training in dairy work, for example, who knew how to milk and do all the dairy work, could start out at higher wages than untrained workers, though the speed with which women learned these jobs was remarkable.

The relation of earnings to the cost of board is somewhat different in these cases. While for groups living together under project management board was from $8 to $10 a week, and usually was figured at $10, the cost to the employer where one or two girls lived with the family—especially if the girls came in as members of the family, shared a room, had the same food as the family, and helped occasionally with the work in the house—certainly was less than under project management but cannot be figured exactly. Because in some States "summer boarders" had been part of the farm income there was a tendency to overestimate the cost of the board. A summer boarder, however, is a very different proposition from a farm worker, and receives very different treatment. So while "board" well above $10 may be reasonable enough for a summer boarder, $10 last year certainly would have covered the costs that could be charged to boarding a worker in a farm home. Almost all farmers have or could have sufficient surplus farm products for their own families at a cost considerably below what it costs nonfarm families who buy at retail prices.

Working Hours; Rest and Lunch Periods.

Women seemed able and willing to work a day of 8 or 9 hours, though everyone the first day or two took many "rests" or sometimes definitely worked only 6 hours. Where a short day can be arranged for the first few days, the breaking-in process will be much less painful, and light work, if possible, is desirable at the start. With a regular transportation schedule, however, new workers who may join a unit at different dates cannot always be given special hours. A definite rest period of perhaps 15 minutes coming at a specified time morning and afternoon, when everyone was expected to stop and no one who stopped could be considered a slacker, would, it is believed, increase the efficiency of the women workers. Further, if schedules could be arranged so that work stopped by 5 p. m. the long drag of hot afternoons would be lessened and probably as much work would be accomplished as under a 5:30 or later quitting time.

The lunch period of 1 hour gives everyone time to wash up, eat leisurely, and rest a little. A dry and comfortable place in which to eat lunch on rainy days, a simple picnic table in a shady place on pleasant days, would make the lunch hour more comfortable.

Work Clothing.

Clothing recommendations call for suitability primarily; for example, overalls; work shirts, not too thin, with sleeves that can be rolled up or down; sweaters or heavy flannel shirts; shade hats; rain coats and rubber boots, the last named a necessity if working around a dairy or in a vegetable-washing and packing room. Halters and shorts are not suitable clothing. Comfortable low-heeled sport shoes with clean, whole socks are desirable; farms are dangerous places in which to go barefoot.

The Women's Land Army bib-overalls with insignia, accompanied by shirt, coat, and cap, are attractive and suitable if one is buying new work clothes.

Sanitary Facilities for Women Workers at Farms.

Sanitary facilities for outside workers were unsatisfactory at most farms. Where more women are employed than can comfortably use the farmhouse bathroom and washing-up facilities, a special place for women, with toilets and washbasins, which will be kept clean and in good order, should be provided. It should be screened, well ventilated, and accessible. There should be enough washbasins and toilets to accommodate the workers without too much delay. If there is running water, washbowls and flush toilets can be installed; if no running water. an outside privy can be made clean and sanitary and enameled basins can be provided. The farmer who expects to employ next season more than two or three women would do well to plan and equip such a washroom this winter. It should have also a simple cot, with a blanket to put over anyone who may feel ill. A Red Cross first-aid kit should be available. With the prevalence of Red Cross first-aid training in every group there is practically always someone qualified to administer first aid in minor injuries or to recognize the necessity of calling a doctor in a case of serious accident or illness.

Drinking Water.

The source of drinking water on the farms was questionable in very few cases, but it would be advisable to check it with State health authorities. As supplied to workers, however, water frequently was in unsanitary containers, and with no cups provided. Water should be brought to the fields in a covered container with a faucet[4] by which it can be drawn off, and individual cups should be supplied. It is not necessary for workers to run for a drink of water every few minutes; a drink morning, noon, and night, and at the two rest periods, should give everyone ample opportunity to quench her thirst. This drinking-water question arises chiefly where women work all day in fields some distance from farm buildings.

Job Hazards.

Sunburn.

The chief caution against sunburn is not to try to get a deep tan the first day in the hot sun. A painful burn is likely to result unless a definite effort to protect the skin is made. The standard ointments or tannic-acid jelly to prevent burns may be used, and a tube carried in the pocket. If a bad burn is acquired, it should be covered with ointment or tannic-acid jelly, wet soda or epsom-salts dressing; in severe cases a doctor should be consulted.

Poison Ivy.

The best advice against poison ivy is to learn to recognize its three shiny leaves and keep away from it. After coming in contact with it, sopping (not rubbing) the exposed skin as soon as possible with chlorox and water (one teaspoonful in half a glass of water) usually will keep it from developing. If it develops unexpectedly it should be sopped with the mixture frequently. IT MUST NOT BE SCRATCHED. Once it is spread by scratching, it will take days to subside. It first appears as a slight rash, then as tiny blisters, then, if scratched, a blotch of blisters. Washing with a thick lather of brown soap is good if done soon after exposure. Bathing with alcohol relieves itching.

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[4] A wash boiler with a cover and a faucet fitted is just as good as a 5-gallon thermos container such as canteens use.

(For general advice for women and girls taking up farm work, see Bulletin No. 47, Food Information Series, U. S. Department of Agriculture. Office of Information, prepared by the Women's Bureau.)

Transportation.

Farmers transporting workers to and from work or from one part of the farm to another in their own cars or trucks should, for their own protection as well as that of their passengers, see that their liability insurance covers such passengers. Serious injury to employees and damage suits to farmers may occur. Safe riding inside the vehicle should be insisted on.

Recreation.

As the majority of women farm workers are young, the planning of some opportunity for recreation is especially important. Swimming is particularly enjoyed after a hot day's work, and camps that have a good swimming place find it much easier to keep their workers contented. A piano, victrola, or radio, singing, informal dancing and games help to make the evenings pleasant. Special treats, such as picnics, corn roasts, going to market with the vegetables, help to break the monotony. When workers are employed not too far away to go home for an occasional Sunday, it is desirable for them to do so. When workers are far from home, and not near any town, an occasional week end off is desirable, unless the worker is employed for a short period only. Some arrangement by which friends can come occasionally for a week end is pleasant.

In farm homes, the farm wife who plans recreation for her family and includes her women workers in it will add to their contentment. Communities that offer such recreation as occasional square dances in the town hall and invite the women farm workers are helping the movement. Churches should notify the camps not only of their services but of social gatherings to which the women workers are welcome.

Lack of means of transportation of necessity has curtailed many social activities, but some planning that will offer occasional breaks in the routine must be regarded as an essential part of the employment of nonfarm women on farms.

PROCEDURE FOR SETTING UP UNITS OF NONFARM WOMEN FOR WORK ON FARMS

In addition to the camps for women farm workers organized in 1943 by the Women's Land Army leaders and the Extension Service labor supervisors, there were numerous private agencies, some farmers, and private individuals who established units of women or girls to do farm work. As this may well happen again in 1944, the procedure that proved most successful in these efforts is outlined here.

There are four major steps to be taken in the planning of any unit group.

1. Find a central locality where the type of surrounding farms needing labor can be served by women workers.
2. Select carefully such farmers in this locality as would like to employ women and to pay them the going rate of wages.

3. Study the housing possibilities and determine what sort of housing and feeding might be available in this locality.

4. Recruit (and select carefully) a group of women for a definite unit serving this specific area.

Locality.

The selection of a locality where there are many farms fairly close together of a type that could use a unit of women or girls obviously is essential. The distance women will have to be transported must be considered; also whether they will be wanted for long-season work, as from May to November, or only for short harvest periods. On these factors will depend the type of unit to be established. This information is basic, and the time to get it is in the winter when the farmers are making their plans for the next season.

In 1943, after the locality was selected the usual method was to contact the farmers, individually or in groups, and see if they would try women. The experience of those who have successfully employed women should make it easier to get the cooperation of the farmers in 1944. A great deal depends on the kind of contact made with the farmers. It is in no way sufficient in these times to take the attitude "if farmers want women let them come and ask for them." They will not do that. The job of the women leaders is to find openings where women can prove their worth, and the job of the women and girls who appreciate the vital importance of food production is to step forward and demonstrate their worth. It is also the job of the farmers to be open-minded about it, and at least to be willing to try women in a cooperative spirit.

The approximate number of women who can be used should be determined, also the time for which they will be wanted. Working hours and pay should be agreed upon.

Housing.

With the varied experiences of 1943 as guide posts, no one need feel that any locality where help is needed has *no* housing possibilities. How much money the Extension Service can use to help finance the housing of such units cannot be determined much in advance, but certainly in 1943 funds were available and the probability is that there will be funds in 1944. To have the responsibility for suitable living accommodations rest on a joint State and Federal agency as well known to the farmers as is the Extension Service assures the confidence not only of the farmers but of the public in such an enterprise. Such confidence could easily be lost by lack of careful management, but that very fact makes the responsibility appreciated by the Extension Service.

Any housing selected for a unit should provide the conditions outlined as follows: (*a*) Comfortable beds, with springs and mattresses; preferably not more than four in a room, though dormitories, if well cared for and well supervised, may be used for short periods without objection. (*b*) For each worker there should be either closet space or hooks for clothing and a table or box for such things as toilet articles; a mirror in each room is a necessity. (*c*) Adequate washing and bathing facilities with hot and cold water; if obtainable, fountain washbasins, which will accommodate four or more at once, are time savers; showers are preferable to tubs, and a row of 4 or 5 shower heads is economical of space; 1 shower to every 8 women is a minimum for hot-weather comfort. There should be at least 1 toilet for every 8 to 10 workers because all leave home and return at the same time; it is possible to have sanitary and well cared for outside latrines if flush toilets are out of the question, but they must be well built, screened, and cared for. (*d*) A living room where women can sit, read or write, and play games is highly desirable. (*e*) Some provision for isolating anyone who may become ill, especially if it is a large unit with a number of women sharing bedrooms, is essential. (*f*) If the unit has more than 12 or 15 workers, there should be not only a cook who will prepare the meals but helpers who will wash dishes and look after the general rooms and washrooms and do the weekly cleaning; such persons might be members of the unit who would take such jobs in turn, for pay, but preferably employees should be hired for the job; women who get up early, work hard on the farm all day at physical work to which they are unaccustomed, should not spend their evenings washing and cleaning. (*g*) A dining room and kitchen well ventilated and well screened against flies. (*h*) A place where clothes can be washed, with a washing machine, if possible, several electric irons and ironing boards, and plenty of hot water. (Nothing adds so much to the health and comfort of living as plenty of hot water.)

Feeding Farm Workers.

(*a*) In unit groups: Whatever organization undertakes to feed women and girls who are working on farms must be prepared to provide, especially at first, about twice as much as such women ordinarily would eat. Farm work burns up calories, creates hunger. Adequate, nutritious, well-balanced, simple meals—a substantial breakfast, an ample and varied lunch, with a good hearty meal at night, and plenty of milk to drink—are necessary. This food must be bought and prepared with judgment and skill. The experts in nutrition and home economics of the Extension Service are well qualified to give the best of advice and supervision to the feeding problems, whether for a unit that they have set up or for one set up by other agencies.

(*b*) In farm homes: Whoever is in charge of placing women as workers in farm homes should undertake to discuss a little the eating habits of the family and the new worker, and if after trial they prove so far apart as to make either of them unhappy, the worker should be shifted to another place.

Recruiting.

For 1944 the Women's Land Army leaders will be ready, with the experience of 1943, to gather recruits in any one of a dozen different ways; but before they go after anyone they should know, from their county farm labor supervisors, pretty much the jobs, the places, the time for which they want their recruits. The women and girls who worked on the farms in 1943 will be the best salesmen of the 1944 plans. This winter, in the large cities and at the colleges, groups of women and girls who worked together on farms are already having reunions. These women will "spread the gospel" to their friends. But it will be necessary for them to know when they are wanted, how many are wanted and where, what are the projects to be set up, and what will be the housing, pay, supervision. The colleges and preparatory schools are eager to cooperate. They do not need propaganda talk to convince them of the need; they want to know what program they can put in that will be most helpful.

The answers to all these questions the Women's Land Army must have ready for the 1944 workers as early as possible, if they are to carry on with increasing numbers the work started in 1943.

PROGRAM FOR WINTER WORK IN ORGANIZING RECRUITS

A suggested program for women's colleges, and high and preparatory schools, would be—

1. To put in a conditioning course for prospective farm workers in the spring, so that they may get "toughened up." This course should include special instruction on how to use their bodies and muscles properly, that they may accomplish their work more efficiently, with less fatigue and strain. While the opportunity to compare the endurance and physical fitness of a number of girls or women before and after a considerable period of farm work has been insufficient to draw conclusions, indications are that, under proper supervision, their physical endurance may be greatly improved by farm work.[5]
2. A further suggestion for the colleges and schools would be to get all students who will pledge themselves to farm work for their vacation, or part of it, to organize themselves into a Women's Land Army Unit of the specific college or school, with such officers as they may need; such a group might be called together from time to time through the winter as the program for the region develops. They would become, by their organized cooperation, an integral part of the Women's Land Army movement.
3. To hold for each unit a short series of lectures on the agriculture of the region in general, on specific instruction or "indoctrination" in the kind of work women are likely to do, and on the social aspects of farm life.

The same method could be applied in urban centers. City women who worked on farms in 1943 would be requested to come to a mass meeting and organize a New York—or Philadelphia, or Boston, as the case might be—Women's Land Army Division. This could in turn break down into special groups that worked together in 1943—business, professional, or industrial units as "AWVS Unit (American Women's Voluntary Services) of the Women's Land Army," "Business and Professional Women's Unit of the WLA," "Garden Clubs Unit," "Rainbow Unit" (for all without special group affiliation), "Federal Employees Unit," and so on. Such units, once set up, naturally would try to get more recruits for their own groups. Members of such units need not necessarily all go to work on the same project at the same time. Vacations would come at different times, but the whole would be an organization about which to build up an *esprit de corps* that would strengthen the Women's Land Army movement.

Such divisions and units could set up standards, under direction of the National and State Women's Land Army leaders, could elect

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[5] Scores of 7 girls tested after 1 to 3 months on farm work:

Before	After	Before	After	Before	After
41	68	55	57	80	81
42	78	66	76		
48	71	75	89		

their own officers, could have conditioning programs before the wor season began, could have preliminary training, lectures by authoriti on different types of farm work (some of these have proved ver helpful and should be continued and extended).

Group planning need not interfere in the least with such organizations as prefer to work independently at recruiting and supervising their own units or recruiting through regular channels such as USES. There is a place for every group. There is need, however, that all groups, however organized, should work and live under good conditions, with fair pay, reasonable hours, adequate and nutritious food, some recreational facilities, and careful supervision. This can best be obtained by having standards set by an organization like the Women's Land Army, working through the Extension Service in every county of every State. It must be assumed that having set standards some means will be provided for the Women's Land Army to see that those standards are lived up to; otherwise, the confidence in and success of the program will rapidly diminish.

Whatever projects are set up, whether under the auspices of the Women's Land Army acting for the Extension Service or under private agencies, a clear and definite statement covering all aspects of the work is of greatest value to the prospective recruits. They should have a statement of the work to be performed, the provisions for board and housing, the working conditions, hours and earnings to be expected, the sanitary provisions assured, the supervision exercised over health, the recreation facilities offered, the equipment the recruits must bring with them and the expenses they must incur. The responsible supervision for the project must be made clear. These are the things nonfarm women going into a new field of work want to know and are entitled to know.

Since she has a choice, each woman and girl must decide where she will put her effort in war work. But she should put it where it is needed and needed now. She is obligated to take a job that bears a direct relation to her country's war needs. The women who will warm the hearts of America's fighting men are those who pick a good hard job and do their best at it. Farming is just such a job. The women of 1943 were just such women.

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UNITED STATES DEPARTMENT OF LABOR
FRANCES PERKINS, *Secretary*

WOMEN'S BUREAU
FRIEDA S. MILLER, Director

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WOMEN'S EMERGENCY FARM SERVICE ON THE PACIFIC COAST IN 1943

BULLETIN OF THE WOMEN'S BUREAU, No. 204

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LETTER OF TRANSMITTAL

United States Department of Labor,
Women's Bureau,
Washington, February 13, 1945.

Madam: I am submitting herewith a description of the work on the Pacific coast farms done by nonfarm women and the conditions under which such work was organized and carried out in 1943. The survey records efforts to utilize this group of workers effectively in a wartime labor-shortage market and the difficulties encountered under Pacific coast farming conditions.

The field surveys were made and the report has been written by Frances W. Valentine.

Respectfully submitted.

Frieda S. Miller, *Director.*

Hon. Frances Perkins,
Secretary of Labor.

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perate valleys of northern Washington, the time of ripening of the various crops proceeds slowly north. The highly specialized farm labor, in ordinary times, follows the crops as they ripen. Agriculture in California at least is practically a year-round industry, though of course the peak of the harvesting comes in the summer and early fall months.

The majority of the farms producing these crops are highly specialized. There are acres of nothing but lettuce in the area where lettuce is grown. There are valleys where every small farm grows the cane berries and nothing else; tracts where strawberries are grown; enormous areas—thousands and thousands of acres—of citrus fruits; thousands of acres of string beans, carrots, tomatoes, onions, potatoes. Most farms grow only one vegetable. There are whole valleys of orchards of apples, pears, prunes, cherries, English walnuts; miles of spinach, lettuce, asparagus. There are vineyards by the mile in certain sections. One part of a State is devoted to growing cannery peas, another to sugar beets or wheat. The crops of all these States are widely diversified, but the farms are not, most farmers confining themselves to one or two major crops.

Even poultry farming, which could be carried on anywhere, is highly concentrated in certain areas. Sometimes great orchards, groves, vineyards, or vegetable tracts are owned by companies rather than individuals and there may be no "farm home" close to the fields. The magnitude of agricultural operations on the Pacific coast, particularly in California, and the great number of farm laborers required, make farming truly a "war industry" of major importance.

THE FOOD-PROCESSING INDUSTRY OF THE PACIFIC COAST

The food-processing industry is so closely allied with the farming of the Pacific area that it can scarcely be considered separately. In fact, in many cases the canneries own and operate farm areas for the great food-processing industry of California. The fruits and vegetables produced here are canned, frozen, or dehydrated and shipped throughout the country and all over the world, supplying the armed forces as well as the civilian population.

Of the "green" fruit, the greater part is packed in large packing houses, usually located near the orchards. Canneries, on the contrary, have tended to move into or near the large cities and towns where more labor and shipping facilities are available.

PART II.—THE LABOR SUPPLY

PEACETIME SOURCES

The care of and more particularly the harvesting of the products of this vast agricultural territory (California, Oregon, and Washington) have been largely dependent on an army of migratory farm workers who appeared out of winter quarters and started in with the crops in southern California, working north with the advancing seasons and varying crops, and upon Japanese citizens or aliens who as owners, renters, or workers cared for market-garden crops. Some workers were specialists—cherry pickers, apple pickers, beet workers, soft-fruit pickers (soft fruit includes peaches, apricots, and cherries), or berry pickers. Others worked at any kind of harvest, but all had developed through the years an ambidextrous rapidity which is simply impossible for an inexperienced harvest hand to duplicate. They are called unskilled labor. In reality they have a highly developed technique that the average "green" worker cannot acquire for a long time.

With the tremendous expansion of the shipbuilding and airplane industries on the Pacific coast, the emergency demand for labor offered these migratory farm workers steady employment at high wages and many of them forsook the farms for other war industries. The Japanese citizens and aliens were moved out of the coastal region.

Also, as in the East, many small farmers whose efforts had never brought in much income found it more profitable to leave their farms while they could earn high wages in industry. This was particularly true where they were so near centers of industry as to be able to live at home and drive back and forth to their work. Farms deteriorated, but the owners got more income from their wages than they had from their crops and could return to farming later.

There had always been a nucleus of permanent help on the farms, who stayed the year round if the farms were large enough to demand it. Most of the labor, however, was taken on for harvesting the various crops, though certain stages of production—as blocking and thinning sugar beets, chopping cotton, pruning vineyards and orchards, pegging and stringing hops—needed extra workers before harvest time.

Throughout the Pacific States it had been the custom for many years for boys, girls, women, and often whole families who lived in towns or cities to go out from their communities in the summer and earn money by helping to pick fruit. These were families or individuals whose regular occupation was not agriculture, who did it both to earn money and as a pleasant change from town life. They took their own camping outfits and went to friends or relatives or to places where they had been before and knew conditions were agreeable. Sometimes the man of the family remained in his job and joined the family only for week ends. Naturally, these workers went where comfortable and clean housing was furnished by the farmer. They stayed several weeks and did a good job. It was not unusual, moreover, for families who had small farms to work for their neighbors at harvest time.

While family help was common, it was only supplementary to the migrants. The "fruit tramps," usually men alone, went from one orchard to another, from one State to another, findings jobs where they could. They were skilled by years of experience.

Though all these types of labor—migrants, fruit tramps, town boys and girls, and families seeking harvest work as a change—had done the harvesting for years, as the war progressed their ranks became depleted by the demands of the shipyards and war industries, which offered the irresistible inducement of more money than agricultural workers had ever earned before. Thus agriculture, unable to compete with war industry, found itself with crops to be harvested for which there was no labor.

THE CRISIS IN 1942

By 1943, producers in the three Pacific States were fully aware of the situation and made every preparation to meet it. Before examining what was done in 1943, however, what happened in 1942 must be considered.

Throughout the whole country 1942 was a record-breaking year for agriculture. Rainfalls and temperatures were propitious, droughts and floods few, and the Pacific area found itself with huge crops to be harvested and a serious shortage of labor. The only Government agency doing anything about farm labor was the United States Employment Service, which also was the agency supplying the war industries. It bent all its efforts to the job. The appeal for help was made directly to the public. Through the press, the radio, State departments of agriculture, chambers of commerce; through "harvest councils" hurriedly organized in the larger cities; through the efforts of various organizations—YMCA, YWCA, Boy Scouts, Girl Scouts—many people went out to "help save the crops."

Day workers were the harvest help sought in the main. They were persons who went out from their homes by the day, taking their own food and furnishing their own transportation if they could. Gas could be provided for those who had cars. If they had no transportation, buses or farm trucks would take them to the locality for which they were booked, where farmers would meet them if necessary. Men, women, and children went out in this way, but the adults were largely a group of persons engaged through the week in other occupations who were contributing their week ends and vacations to harvest work. In the small towns, which were surrounded by agricultural lands and whose very life depended on agriculture, it was easy to understand that the crops must be taken care of. Most of the people in the towns had worked on farms at one time or another. To great numbers of people harvesting was not a new experience.

Even in 1942, however, an attempt at organization was being worked out. Many groups of young people went to farms, though often without adequate supervision; camps for youth were set up without enough planning or good management. But the faults were recognized and plans were made for much better organization in 1943. In 1942 the USES was the Government agency that placed farm labor, but it had no authority nor funds for supervisory work. In some areas a very active effort was made to get women for farm work, but in most localities no effort to place women except as day workers was made because (1) there was no housing for women on the farms, and (2) most farmers did not want women.

In California the American Women's Voluntary Services had anticipated this need and had realized early in 1942 that there was much work that women could do. An Agricultural Committee was formed under the leadership of an able and enthusiastic chairman. After study of the Women's Land Army in Britain and the use of women in this work in various other parts of the United States, and after consultation with several Government agencies, with State chambers of commerce, and with growers, the committee decided to work on a project of recruiting and housing women over 18 who were willing to help in harvesting the crops of California.

Examples of 1942 Camps for Women.

Some of the more hard-pressed farmers were ready to consider using women. In June a farmer from Vacaville, Calif., went to the AWVS chairman and said that he had read about women being recruited for farm work, and that he and a group of farmers were ready to put $100 each into a pool to finance a camp for women if the AWVS would recruit them and supervise the camp. To the question as to where they could be housed, he replied that the district school board would give permission to establish the camp in the high school and to use the school buses to transport the workers; that they could even take the school buses out of the county to get workers if they would pay the mileage. (Since some of the farmers who wanted help were members of the school board, and others were influential members of the community, the practical value of using the school was easily understood.) The AWVS agreed to recruit the women, and this camp, successfully carried through in 1942, was the forerunner of the many camps of workers, both women and young people, established throughout California in 1943 in school buildings. This camp, set up in the high school with a capacity of 70 workers, maintained about 50 women picking apricots. The domestic-science room was used as a kitchen; the gymnasium, supplied with cots, was used as a dormitory; and an excellent camp was maintained. Other camps were set up as the need increased. The personnel of this camp were chiefly women who were able to take their vacations at this time or had no regular employment. No report of their earnings was available.

While this was being planned in northern California, in southern California the AWVS had been recruiting harvest workers. Booths had been put up in the streets of Santa Barbara and prospective recruits had signed up for harvest work. In cooperation with the USES, ranches were sought where the "volunteers"[2] could work. Several apricot growers were found who thought they would need women but had no housing facilities for them. (The housing that had been used by migratory workers was not satisfactory for women, nor were there sanitary or bathing facilities, and the growers frankly preferred Mexicans if they could get them, who would accept the housing they had.)

One grower who said he would like a group of women had the best apricot crop in his experience and did not know where he could get labor. He could provide a beautiful camp site with fine water piped to it. Tents with stoves, tables, and chairs were furnished and beds with springs (but no mattresses) or canvas cots. Outdoor showers were provided and the hot sun warmed the water in the metal pipes. Drinking water was hung in water coolers. Outdoor privies, inclosed but not roofed, were supplied, three for women at the camp and some out in the orchards. The campers bought and prepared their own food.

The women picked and halved apricots, using ladders that they moved themselves, and earned—partly on piece work and partly on hourly rates—something over $3 a day. The hours were 9 a day, Sunday as well as weekdays, as the work lasted only 3 weeks.

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[2] In California the men, women, and young people who were not ordinarily agricultural workers but who went out to harvest were called "volunteers" though they were paid.

On the whole, the experiment was satisfactory to both the grower and the women. Even at that early day the factors that were to prove essential to good camps were noted. Supervision was needed, the training of new workers was insufficient, careful explanation and demonstration of the work to new employees as they came on would have insured better work.

A tomato-picking camp recruited from the Los Angeles area was not entirely satisfactory, as the housing arrangements were difficult and the picking was not good enough at the rate paid to satisfy the women or enable the girls who followed them to make more than would pay their board. They did, however, enjoy their experience at the camp. They did not work full 8-hour days.

The camp in 1942 that really began to develop the possibilities of adult women workers was sponsored and recruited by the AWVS of southern California at the request of one of the largest California fruit growers. One hundred and fifty women were requested, to pick grapes in the San Joaquin Valley. The company would house them, feed them (the excellence of the food was soon to become known throughout the valley), maintain janitor service, and pay a camp director selected by the AWVS. Bus fare would be paid one way if the workers stayed 3 weeks, both ways if she stayed 6.

Women were housed in converted box cars, six workers to each car. There was a utility building with flush toilets, hot and cold showers, and wash bowls, and a building with the supervisor's quarters, living room, and place to lounge or play games, also tubs for the washing of clothing.

The women worked under the immediate supervision of regular ranch foremen; they were carefully instructed in their work and were not expected to be profitable workers the day they started. The pay was 65 cents an hour for all, and the working day was 9 hours—from 7 to 5—with a hot dinner at noon in the company dining room. A full week's pay was $35.10, and after deduction for board $26.35 remained for the worker.

Employment of Young People.

While the AWVS was busy with camps for adult women, its major interest, the YWCA had done similar work in organizing camps for girls of school age. It is not the province of this report to discuss the employment of youth and children in harvest or farm work, though in 1942 they were unquestionably the largest group of volunteer workers secured for harvest work in all the three Pacific Coast States. The efforts of 1942 showed clearly the need of definite organization standards and supervision. In California, the YWCA appointed a State Chairman for Agriculture and, in cooperation with the YMCA, the USES, the AWVS, the Chamber of Commerce, and the education authorities under the auspices of the San Francisco Harvest Council, worked during the winter of 1942 to establish standards that should enable the employment of youth to be more effective and satisfactory. As many of the same problems come up with adult women, standards were made to cover both young people and adults.

In Washington in 1942 the Governor sent out an appeal for all who could do so to offer their services, and asked the University of Washington to cooperate by sending groups of students to help harvest apples. This job was put in the hands of the college dean, who turned the recruiting over to the students, a chairman for the women and one for the men being appointed. An office for registration was set up, and registration blanks were sent to all the organized groups of students (from church groups to fraternities there were some 200 student organizations). Altogether about 1,000 students, both men and women, went out to the two big apple sections, Yakima and Wenatchee. In both sections an alumnus who knew all the arrangements was on call ready to give assistance, and in each area there were women chairmen and local women who could be reached in any emergency to act as chaperons for the girl students. The Employment Service took over the job of arranging housing at ranch homes or at the YMCA for part of the men.

FEDERAL GOVERNMENT PLANS FOR 1943

At the end of April 1943 the Congress appropriated funds for a farm-labor program to be administered by the Extension Service of the Department of Agriculture through its various State offices. As one part of the Emergency Farm Labor Program, the Extension Service formulated plans for the greater use of women in farm work by setting up a Women's Land Army program. Miss Florence L. Hall, Extension Service, was named Chief of the Women's Land Army Division, United States Department of Agriculture. This did not mean that a new women's organization was to be set up, but rather that the use of women to replace men farm workers was to be promoted where needed and every encouragement given to such a movement. While each State was free to appoint a Women's Land Army leader, there was no compulsion, and the States made their own plans for using women on the farms. The National leader stood ready to give all help possible. Every woman who took part in the agricultural work of the country would be given a certificate of membership and participation in the Women's Land Army.

All three Pacific Coast States appointed WLA leaders from the regular personnel of the Extension Service, Home Economics Division. These women worked as assistants to the Farm Labor Supervisors, and though, because of the late passage of the bill, they did not participate in the early planning, they got into the work as soon as that was possible. While at first the real magnitude of the WLA job was not always foreseen, and leaders sometimes were carrying the double burden of an old plus a new job, the importance of the job became increasingly apparent to all. It was a job where "the more you do, the more you have to do," and where the success and enlargement of the program would depend to some extent on the interest, ability, and enthusiasm of the WLA leaders, and on the support and interest of others members of the Extension Service staff in the program.

PART III.—CALIFORNIA'S USE OF WOMEN IN 1943

With the experience of 1942 behind them, much planning and organization was done during the winter of 1942–43, particularly in California, where it was expected to have a considerable number of camps in 1943.

California already had done far more than most States in preparing to go to work itself on its farm-labor problem. Through its Food and Fiber Production Act it had appropriated a million and a half dollars to be administered by the California Farm Production Council, which was ready to help women's groups with plans.

STANDARDS ESTABLISHED

In March 1943, before the harvest season started and before the Federal and State Extension Service of the Department of Agriculture had been assigned the job of recruiting and placing farm workers, the San Francisco Harvest Council had appointed a committee and gathered material from such agencies as the AWVS, the YWCA, the California State and San Francisco departments of education, the USES, the Pacific Camping Association, and others, and had put out several manuals relating to harvest camps.

One of these manuals related to the duties and responsibilities of camp directors, one to those of the camp supervisor, one was on standards for living and working conditions in student camps, and another on the same for adult camps. The manuals also included a suggested contract to be signed by farmers who sought labor from the camps and an agreement to be signed by the workers enrolling. These handbooks became guides for the establishment of the 1943 camps, and while not every camp could meet every detail of the plans set forth, there was a definite standard that the camps sought to maintain. Having this standard down in black and white made its attainment much easier.

To discuss these manuals briefly: They recognized that the prime necessity of a satisfactory camp, one that not only gave good service to the farmers but kept the workers contented and working hard with good morale, was good supervision and leadership. As most of the harvest camps were for 50 or more persons, manuals set up duties for both a camp director and camp supervisors.

The director had the responsibility for the whole camp; was expected to be familiar with the labor needs of the farmers, with the potentialities of the camp members, and see that both were met; to know the plan and aims of the camp sponsor and work out the many problems that arise in any such organization. He or she was also to furnish the liaison between various community organizations in the vicinity of the camp, so that the community as a whole should be informed, interested in, and cooperative about the project.

The actual business management of the camp was the director's duty, including keeping the records, purchasing supplies, collecting and accounting for the board money, and so forth. He or she was responsible also for planning menus, for the morale, health, and physical welfare of the workers, the general upkeep of the camp, personnel problems, safety, and prevention of accidents.

In addition there were two manuals—for students and for adults—on standards for camps as they relate to living and working conditions. The first was prepared by the council subcommittee for Adult Harvest Camps and covered such topics as (1) *health*, including nutrition, medical supervision, housing, (2) *safety*, including camp site, accident prevention, transportation, and telephone, (3) *sanitation*, covering milk, water, dishwashing, garbage, pest control, animals, latrines, showers, laundry facilities, (4) *conditions of employment*, including selection, wages, working conditions, supervision, community relationship, and a sample medical-report card.

The standards were, of course, utopian. It would have been im possible to attain all these goals. But the fact that they were established as what camp sponsors would like to have in their camps, and in part would insist on having, was important. It let farmers, workers, directors, supervisors, all know that the aim was to have for these inexperienced workers good camps, well run; that a good director with common sense and a sincere interest would be backed up.

Contract With Farmer.

There had been occasional difficulty in 1942 in getting farmers to stick to their agreements. Sometimes, seeing their crops approaching harvest time and without sufficient help to harvest them, they requested that a harvest camp be set up to serve them. After all the organizing and recruiting had been done and a camp was practically ready to open for operation, a farmer might get migrant or Mexican labor and change his mind about the camp, regardless of the time and effort that had been spent in getting workers for him.

Consequently, in 1943 a contract was drawn up for use between the "camp sponsor" and the grower or group of growers, or processor, which agreed that the sponsor should recruit a specified number of physically capable workers for an 8-hour day, 6-day week, and should maintain the camp at the number of workers agreed upon. The camp sponsor would be responsible for the staff and for the board of the workers, and also for the insurance of workers *while at the camp buildings or grounds.* It was agreed that the growers should provide housing and equipment, sanitary facilities, water, electricity, fuel and telephone, services (garbage disposal, ordinary maintenance service, police protection), transportation to and from place of work but not from recruiting centers to camp and return. The growers should provide also first-aid kits at work place, fresh drinking water in approved covered containers readily accessible, and proper toilet facilities convenient at the place where field work was performed. When there was no work for a camper who was available, her expenses at camp must be paid by the grower. All growers must guarantee workmen's compensation and liability insurance to campers while on the job and while being transported, and must guarantee liability insurance on all buildings and living accommodations.

A council of three was to be chosen to which any difficulty that might arise should be referred.

These in general were the provisions of the contract. There was no way of enforcing its provisions. The farmer might not have enough work; the sponsor might not recruit enough workers. The good will and good faith of both groups were vital.

Workers' Enrollment.

All workers recruited through the AWVS signed an enrollment application, were required to file a statement of physical fitness (a woman physician in San Francisco offered to give the medical examination to women recruits for $1.50, or they could apply to their own doctor), and if accepted were given an assignment card which they presented at the camp. A postcard was sent by the recruiting office to the camp with a return postal which acknowledged their arrival. Junior workers had to have the approval of parent or guardian. A general description of work plan was given, the hours of work (40 to 48), the cost of board ($1.50 a day), the personal belongings to be brought (bedding and all personal equipment). Rates of pay were specified only as "prevailing wages will be paid."

RECRUITMENT OF WOMEN

The extremely serious shortage of harvesters in 1942 and the wide publicity given to the need for emergency help had made the whole population farm-labor conscious by 1943. This interest had been kept up through the winter by meetings of all organizations concerned in helping and having something to contribute, combined with press and radio publicity. In California, with the opening of the 130 new farm-labor offices by the Extension Service in 1943, each with a conspicuous and easily read sign outside, every important agricultural center and all large cities had offices, usually with a man and a woman ready to talk to recruits about the need and opportunities for both men and women in farm work and also to take the farmers' requests for help and to cooperate with existing organizations.

The Harvest Council, organized in 1942 in San Francisco and in several other large cities and with a membership representing all important organizations, had done and continued to do much work in getting emergency service people out for day-haul and week-end work. The American Women's Voluntary Services in California had been the outstanding organization promoting the use of women in farm work, and they continued and expanded their campaign, recruiting for both camp and day workers. In general, the women who went to camps were recruited largely through the AWVS, which worked in close cooperation with the farm-labor offices. The women who went out on day work registered through the farm-labor offices, the AWVS, or local committees, depending on the locality.

In 1943 the effort was made to base recruiting on actual needs reported, rather than a general cry for help. Where definite information as to time, place, work, cost, and probable earnings could be given, better results were obtained. Recruiting far ahead had been found unsatisfactory. Workers who were expected did not always turn up, had changed their minds.

Business houses and stores in the large cities were consulted to see if vacation times could be made to fit into harvest needs. Groups of foreign-born women, in some cases refugees from European countries, gave valuable help.

While there had been considerable publicity about a "vacation with pay in the country," more sensible recruiters were pointing out that though it was an essential job, and a patriotic service, it was hard, hot, dirty work, and were not urging people to go unless they "could take it." Recruiting for the camps involved, of course, women who were free enough of home responsibilities to stay away for at least a week, preferably longer. This was more difficult, but women who can work 1, 2, and 3 weeks or more at a job become much more valuable than those who work for a day only.

In recruiting women for the camps the **AWVS** of San Francisco particularly tried very hard to screen the applicants and send only those who seemed likely to prove satisfactory workers. They reported much better success when that was done. If, due to a shortage of applicants, anyone who thought she wanted to go was sent, the turn-over was much greater, resulting in added cost and lowered efficiency.

WOMEN WHO SERVED

The women who went to the California camps were, for the large part, women who were or had been employed, who normally earned their own living. While there were a few college students, these were definitely in the minority. There were, however, a good many teachers and other professional women, as well as women from all sorts of business occupations.

There were a few homemakers whose families were of such ages or occupations that they could be left to look out for themselves. Occasionally there was a well-to-do older woman who had lived for years on "income" and now felt an obligation to help in the great emergency.

WORK DONE BY WOMEN

In general, farmers on the Pacific coast sought women for harvest work only. For the basic planting and cultivating they felt they must have men—Filipinos, Mexicans, Italians; the fields were considered too large, the work too heavy, to be suitable for women. In 1943 the demand for inexperienced women workers was considerably less than in 1942, but the kind of work for which they were wanted was the same. This was due partly to the smaller over-all production of the crops for which women were used, but more largely to the importation by the Government of agricultural workers from Mexico and to a larger number of regular migrants than had been anticipated. The Mexicans were imported through a contract with the Mexican Government, and worked at a prearranged rate per hour of 65 cents, or sometimes at piece work.

Cherry picking was an early-season job. Expert cherry pickers are rapid, ambidextrous, and skillful. "Greenhorns" were not so skillful but could do and did the job. Many children were used, as well as women. Sweet cherries are picked on the stem, graded and packed at the packing houses. Sour cherries can be pulled off, as they go to canneries and may be picked with less care.

Berry picking has always been considered a "women's and children's job," doubtless because small hands and fingers are supposed to get among the vines and canes more easily, and the stooping and bending over for low fruit such as strawberries is accepted more willingly by women and children.

Many of the berries picked in the Pacific States are canned or made into jams. Where that is done the berries often are picked into pails and emptied into barrels, requiring much less careful handling than if picked into pint or quart boxes for consumption fresh.

In the *fruit orchards* other than citrus many women were employed, but here again lighter crops than in 1942 in almost all fruits lessened the labor demand. Women thinned, picked, packed, and canned peaches, pears, plums, and apples as the harvests came along. Occasionally they sprayed fruit trees. Picking, in the case of all fruits, is done chiefly from three-legged ladders, wide at the bottom and tapering to a point at the top. The ladders are of various lengths according to the size of the trees—from 8 to 18 feet, sometimes longer. Almost any woman who is physically equal to farm work can move an 8-foot ladder and set it up if she has been given instruction with a demonstration of how to do it. Some can move longer ladders. Two together, properly taught, can move and set up any ladder they would use.

Picking the fruit was work that women accomplished with satisfaction to the growers after a little experience and instruction, and many women with and without former experience did this work. In the pear orchards much of the picking was done by size, pickers being given a ring and told to pick only fruit the size of the ring. They soon learned to gage by the eye the proper size to pick. Apple orchards were sometimes picked twice, the first picking taking only the well-colored fruit. Picking requires very careful handling of the fruit, not to bruise it, and women generally were more careful than boys. It is heavy work, too, the full picking bags, which are hung over the shoulders by straps, holding about 25 pounds. Some growers considered these too heavy for women to carry down the ladders. It is simple for women to fill the bags only part full, so that they may be easily handled. This of course makes more trips up and down the ladder and so slows the work somewhat.

Apricots and pears were the principal fruits cut to be sun-dried. The cutters halve the ripe fruit, flicking out the apricot pits with a twist of the knife but leaving pear cores in, and spread them on wooden trays that are left in the hot sun until the fruit is dried, after which they are stacked in sheds until ready to pack. Some women prefer the stationary job of cutting and others the more active job of picking.

Prunes and English walnuts.—In September and October the harvest of prunes and of walnuts, coming at about the same time, demanded thousands of harvesters. Both crops are picked up from the ground, having been knocked or shaken from the trees—sometimes by a homemade shaker consisting of a rope tied to a tree and then to a truck which, alternately pulling and slackening the rope, shakes the fruit off the branches. Women crawl around or bend over and pick up into buckets the prunes or nuts; the fruit is put into lugs (boxes), the walnuts into sacks. Prunes vary in size and obviously large prunes fill boxes more rapidly than small ones. The condition of an orchard or grove also influences the speed of the work. If the ground is clean, cultivated, and smoothed before harvesting, the picking up is easy and rapid. If it has grown to tall weeds and the furrows are left from the last cultivation, the work is much harder. Often the buckets provided by the grower are too large and heavy; women do better with smaller pails.

Hops called for many pickers. The hops are very light and are picked into huge burlap bags, care being taken not to include leaves.

Workers can stand erect. Bags are weighed and marked with the worker's number. Women were used also as day workers for pegging and stringing hops. These were largely women accustomed to agricultural work who went out from nearby towns and worked by the hour.

Vegetable crops.—By midseason vast acreages of string beans and lima beans were ready to be picked. Women and children were again called on in great numbers. Many of the youth camps were established for vegetable picking, and numerous women helped pick by the day, particularly beans but to some extent carrots, onions, and potatoes.

Tomatoes were another crop that called for women and children. Many small farms had tomatoes, and unable to get either Mexicans or migrants, called for women as day pickers or from camps. Tomato picking requires care in handling the fruit, and when fruit is going to the cannery care in putting only acceptable fruit into the boxes. It is a hot, bending-over job and the juice from the vines covers the pickers with black stains. Farmers reported that boxes picked by emergency-service women were seldom rejected when inspected at the canneries for over-ripe, green, or damaged fruit.

The *lettuce* industry employs many women regularly in cutting, washing, and packing, but no camps were set up for women in the lettuce area. Many migrants worked there, and the Women's Land Army did not report any special recruiting for that work.

Grapes, a major crop in California, cover thousands of acres and employ thousands of women. Women were employed for picking, turning, and rolling grapes in many vineyards; also for thinning, that is, taking off leaves that shade the bunches. One of the largest growers, who had employed women in two camps all through the 1943 season, picking fruit and later grapes, kept on a group through the winter of 1943–44. The weather in the valley was mild enough to work out-of-doors all winter. Under an experienced foreman the women were taught to prune and tie the vines.

Wine grapes are cut back to a few buds from the main stem, raisin grapes have a few long canes left that must be twisted around and tied to horizontal wires. On a visit to this crew in February the foreman was asked how the women were doing. "I hate to admit it, but they do a better job than the men did," was his reply. They were paid exactly the same wages as men, given the same excellent food, lodged in comfortable quarters with a good camp director. In the spring of 1944, 19 crews of 20 to 25 workers each were at work in these vineyards and 16 of the crews were women; 3 of the crews were supervised by women. The women were paid the same rate as the men, 70 cents an hour. This employer believes that large-scale employment of women is good business for him, and he tried to attract good workers by giving them good working conditions.

Harvesting seedless raisin grapes, which were particularly desired by the Government for their food value, consisted of four operations:

1. Cutting the bunches from the vines with a knife, and laying them on a large sheet of paper (tray), and leaving them in the rows to dry.
2. Turning the grapes: After 10 days, if grapes are all dry, workers turn them, two workers together taking the four corners of the paper

and flipping the contents over. This requires a continuous jack-knife position for workers and makes some women dizzy.

3. Rolling: When grapes are dry, folding the edges of the paper in over the grapes, rolling the tray up, and stacking at the side of the row under the vines or in the sun, according to whether or not they need further drying. This, like turning, is a back-breaking, muscle-stretching job.

4. Loading: Picking up the rolls and loading them on a tractor trailer that takes them to the yards, where they are dumped into field boxes and go to the packing sheds. Loading is easier than turning and rolling. Work in the fields and in the packing sheds usually is done by different groups of workers. Field workers worked 9 hours, packers 11.

WAGES, EARNINGS, AND RATES OF PAY

Because of the fact that most of the work was piece work, earnings varied with the individual and with the crop. Another factor influencing the "average earnings" of a group was that sometimes women with real harvesting experience were among the workers. In general it may be said that inexperienced women, harvesting for the first time, probably earned for the most part between 2 and 3 dollars a day. It is reported that some, after they knew they had made enough to cover their board, would ease up a little. Sometimes the inexperienced were given poor fields, poor berry patches or badly cultivated orchards where they could not possibly make good pay. Usually they had little or no previous training and often received inadequate instruction and induction when they first came on the job.

Quoting from the AWVS report for 1942, "Low wages in some crops and low earnings capacity in others seemed to be the major complaints. Many workers felt that wages should be paid on an hourly instead of a piece-work basis. Efficiency always increased with practice. Wages were generally adequate for fast workers."

The rate of pay and wages in 1943 were, undoubtedly, the highest they had been in years. Hourly rates were everywhere high, 50, 60, 70 and 75 cents being reported, with 60 to 70 prevailing, but very few of the inexperienced women harvesters worked at hourly rates. Some of the farm-labor supervisors felt that women would not want to work at hourly rates, because they could earn so much more at piece rates. That may be true of the experienced migratory women who did harvest work, but such evidence as there is does not show that it would be true of the nonfarm women as a whole. Nor were there any data on the production records of the nonfarm women or on the quality of their work compared to that of the professional harvesters, that would give farmers some basis for judging what a woman might be worth.

It was rarely possible to get any pay-roll data as to the earnings of inexperienced women, but certain general statements were made:

Berries, *tomatoes*, *beans*, all were harvest jobs, using great numbers of inexperienced harvesters, women and young people. Berries particularly were a "family job," where man, wife, and children could earn a good day's pay but the average nonfarm woman could not.

Strawberries paid 3 cents a pound.

Bean pickers.—1½ to 2 cents a pound was paid to yield $3.50 to $4 a day.

Tomato picking paid 15 to 20 cents a lug (about 32 lbs.; a bushel weighs 53 lbs.). This might yield average inexperienced workers between $2 and $4 a day. The WLA leaders reported $2 a day for women in one county and $5 to $6 in another, showing the great variation in picking conditions.

Prunes were a poor-paying crop. Picking small prunes off the ground paid 20 to 25 cents a box, large prunes 30 to 35 cents. The AWVS reported daily earnings of $1.80 to $2 at one of the best camps. *Apples* netted all women better pay. At 15 and sometimes 20 cents a lug the majority of women could make $4 a day; slow ones $3, fast ones $5 and up.

Pears paid 15 cents a lug, later raised to 18 cents. The earnings were about the same as for apples. When picking to size, using a metal ring as measure, the earnings were less, but in the last picking, when they stripped the trees, women made their best pay.

English walnuts.—The prevailing rates for walnuts were 30 to 50 cents a sack (weighing 50 to 60 lbs.). The average adult woman picked about 12 sacks a day, earning around $3.50. One inexperienced woman said she earned nearly $6 a day, and the all-time high was made by a professional Portuguese picker who earned $11 in one day. Containers, usually pails, were of various sizes and were emptied into the sacks.

At one camp, organized by the WLA, the average daily earnings for all (including the $11 walnut picker) were $3.84. This was an actual pay-roll record. Women had picked walnuts and grapes.

Seedless-grape picking paid 5 cents a tray. A good picker might pick 100 trays a day, a very fast picker 150, earning respectively $5 and $7.50. But the average inexperienced worker would earn considerably less than that, though some women reported $35 a week.

At the two camps employing steadily the largest numbers of women, hourly rates of 70 cents were paid for whatever work was done, whether picking plums or picking or pruning grapes. At a 9-hour day this made $6.30 a day, from which $1.25 was deducted for board.

These camps had started at 50 cents an hour September 1, 1942, had raised the pay to 60 cents two weeks later, to 65 cents in May 1943, and to 70 cents in October 1943. The weekly farm-labor reports gave the prevailing hourly rate in the valley around Fresno as 70 to 75 cents.

For day-haul women, earnings would be about the same; certainly no more, as they had less steady work through which they might gain experience.

Supervisors.—Women who volunteered to act as field supervisors received $1 an hour, paid usually by the farmers. These were principally women who went out in charge of youth. If they were assigned to a camp, they were paid by the California Farm Production Council from State funds $7.50 a day.

HOURS

The working hours at the camps usually were 9 a day, though some women may have worked a little longer.

As almost all the work done by the women from camps was piece work, they were able to take what time they wanted for lunch, which was eaten in the field. At the two camps where the girls were trucked back to lunch, they had an hour from the time they stopped work till they began again, which did not mean a full hour's rest. Here they worked 9 hours, and when the suggestion was made that they work only 8, the women objected to losing the extra hour's pay.

The day-haul women's hours varied greatly. Many times they could not work a full day. Naturally this lessened their efficiency and their value to the farmers, but in the emergency program the help they gave generally was acceptable for the time they could work.

Rest periods.—No provision was made for any rest period. Women took what they felt they needed. If working by the hour under a foreman, they usually kept going; if on piece work, they could pause if they chose.

TRANSPORTATION

The farmers arranged for the transportation from camp to the place of work and return. Sometimes the farmers had the use of school buses, so the only expense was the driver and the gasoline, but more often they used their own trucks. Transportation from home to camp usually was paid by adult workers themselves.

HOUSING

Many California camps were housed in public-school buildings. The life of the small communities in California is very closely linked with agriculture. The members of school committees were in many cases farmers. The district high schools were often fine buildings, well equipped in every way, with gymnasiums, showers, kitchens, cafeterias—even laundry facilities in some cases. Usually they were located in or near a town that was a business center for the surrounding farms.

It was therefore a natural thing for a number of farmers who wanted to employ a group of women harvesters to suggest using the school building to house them, and, further, to have no difficulty in securing consent. Cots generally were set up in the gymnasium. The toilets, hand bowls, and showers provided for the students gave ample sanitary facilities. The rooms where domestic science was taught afforded a place for cooking, and a lunch room or in some cases a cafeteria offered a place for meals. Generally there were small rooms to serve as offices, sitting rooms, and so forth. The farmer's group usually provided the furnishings needed, as cots and mattresses. The farmer-employers paid for the telephone, gas, electricity, and any other fuel used. In many little ways they assumed a share of the responsibility.

The AWVS continued in 1943 its sponsorship of camps for adult women[3] 18 years and up and two camps for junior girls. This included all the preliminary organization work, the recruiting, interviewing, and placing of workers, the arrangement for the staff of the camp—cook, helpers, and camp director, the arrangements with the farmers for employment, wages, working hours, and transportation from camp to farm; the facilities for transportation from city to camp; and the arrangements for food, including buying and installing the necessary provisions to open the camp. Also, theirs was the responsibility of passing on the housing suggested or offered by the farmers; or if none was suggested, finding it.

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[3] Sebastopol, Sonoma, Selma, Arvin, Delano, and Hollister.

If the housing was provided by the farm group asking for the camp, it was subject to the approval of the AWVS chairman. For the actual cost of board, which included, besides the food, the salaries of the camp cook and kitchen assistants, the AWVS was recompensed by the board paid by the women, usually $1.50 a day. The salaries of the director and the supervisors (the latter employed only in the youth camps) were paid in 1943 by the California Farm Production Council, the agency that disbursed the money appropriated by the State.

The cost of the housing, utilities, and equipment was met by the farmers in the group; the organizing, recruiting, and general supervision was a volunteer service by the AWVS. This service was no mean offering. The job took the full time of an able and experienced committee chairman, with such part-time assistance as she could secure, and clerical help in the organization headquarters amounting to one part-time typist.

While the camps were run entirely on a nonprofit basis, funds might be transferred from one camp that was showing a small surplus to one with a slight deficit.

Two of the camps were operated entirely by the AWVS. They "sponsored" three other camps for adult women, two of which were the result of the camp requested of the AWVS in 1942 by one of the large fruit-growing corporations. This company furnished housing, board, all equipment, charging the women $1.25 a day for board. They also paid the salary of the directors. Recruiting for these camps was done by the AWVS and, later, also by the Farm Labor Offices.

One was a small camp located on an apricot grower's ranch. It was a tent camp, with a cook-house built for meals and cooking. The grower's sister acted as supervisor. Board was $1.25 a day. The whole set-up was approved by the AWVS, which recruited 18 workers for it, but it was operated entirely by the grower.

One more camp for adult women was opened in October at San Ramon again at the request of a group of growers, and was staffed and operated largely by the personnel of the local high school. It was well run and successful, due largely to the school leadership. Both the Farm Labor Office and the AWVS recruited for it.

The seventh and last camp for adults was one sponsored by the Sierra Club of California and included both men and women. The Sierra Club, a very long-established club of mountaineers and hikers, had responded in 1942 to an SOS from a large prune grower about 60 miles from San Francisco. They responded 200 strong, both men and women (of whom, it was reported, "at least 100 *really worked*"). Being experienced campers, all they asked was good drinking water and toilet facilities; in other respects they could look out for themselves, establishing their own camp and cooking their own meals. In 1942, they got 15 to 17 cents a lug (box) for prunes; women averaged 12 lugs a day, earning about $2.

In 1943 the growers asked the Sierra Club to help again, and this time a schoolhouse offered its gymnasium as a place to house them.

The showers and toilet facilities of the school were made available, the commissary was established in a nearby church, and a young home-economics teacher presided over the camp and helped to cook on days when the camp almost had to close for lack of a cook. The superintendent of schools made contact with the farmers (he was also on the County Farm Labor staff) and helped to distribute the workers where they were most needed. In 1942 the Sierra Club had worked for a large grower. In 1943 that employer had Mexican labor and the campers worked for many small growers. The farmers liked having some men in the group (though they were far outnumbered by women) because the men could shake and knock down the prunes with 15-foot poles and the women (who had been advised to bring knee pads) could scramble around and pick them up. These small orchards were not so well cultivated, weeded, and smoothed as those of large growers, so picking was harder and slower; nor were the small farmers so eager to make things easy and pleasant for the workers as the large grower had been.

The Sierra Club workers filled their own canteens with drinking water and carried them to the fields. Sometimes the farmers brought around cool drinks. They appeared surprised that the women would really *work*. Women found the 15-pound buckets supplied by farmers too heavy and usually took smaller ones of their own, holding about 7 pounds. Toilet facilities, on many square miles of orchards, were nonexistent.

The camp was open 6 weeks. Members came and went, and in the end both the farmers and the workers were pleased with the service rendered, though the amounts earned were not large.

FOOD

The camps furnished a hot breakfast, usually put up lunches during the morning and sent them out to the workers, and gave them their chief meal at night. The two company camps brought their workers in to a hearty meal at noon, consisting (at the camp visited by the Women's Bureau agent in February) of soup, meat, potatoes, two vegetables, bread and butter, tea, coffee, milk, and choice of two kinds of dessert. This camp fed a large number of men workers from the same kitchen. The camp furnished a hearty supper with meat. The officials of this company said that if food was curtailed they found their workers' production falling off. All the food used was raised on the farm, but the company said the $1.25 a day did not pay the cost of board. This and some other camps became known for their good food and attracted recruits, who chose camps with good living conditions if they could. Occasionally there was complaint about insufficient food and there is no doubt but that it takes experience to gage the appetites of vigorous farm workers, whether men or women.

ATTITUDE OF FARMERS TOWARD NONFARM WOMEN

The attitude of the farmers who employed women—those actually interviewed and those whose feelings were reported by workers, camp sponsors, WLA leaders, and farm-labor placement officers—did not differ much from that of the farmers in the North Atlantic region.

In general, they were surprised and pleased at the ability of the women to "catch on" and to do really good work. There was expressed several times the opinion that these women were much more careful about their work, did not put leaves or bruised or over-ripe fruit into their boxes, were "nicer" about their work than the boys or ordinary migrants. (This was said also in the canneries.) Many farmers said that in 1942 and 1943 they did not know how they could have got their crops in without the women and children.

Farmers and camp directors often expressed the idea that while the women worked hard in the morning they eased up after they knew they had earned enough to cover their board. (This was said of camp workers.) On the other hand, the largest employer of women, who paid them the same wage as men, expressed the keenest satisfaction with their work and ability and said that as far as he was concerned they were there to stay if they wanted to. His foreman said, "The women here come out to work. The quality of their work is very good. After a few weeks the nonfarm women are as good as regular women agricultural workers. They work right along, don't fool, catch on quickly."

Another expression of opinion was that "the women don't do so well as men when they get on tall ladders, and the effort will be to use women for ground and short-ladder work."

When all was said and done, however, there was no question but that farmers as a whole in 1943 preferred their regular migratory and local workers, and failing them the Mexicans imported from Mexico, and even prisoners of war, to the inexperienced nonfarm women. Those who had employed women felt differently, and some expressions of opinion related by the WLA leader in her report are quoted here:

San Joaquin County:

"In the packing shed, in the sorting and grading of potatoes and other products, women are superior to men. In onions the women seem to grasp and understand the work better than the men and are faster with their hands. In the field the women saved the crop, for which I had a Government contract, though it was hard work and women shouldn't have to do it. A woman takes more pains, takes pride in her work, and she is very cooperative, does what she is told and doesn't argue. The usual men workers don't care about the quality of the work."

Sonoma County:

"We couldn't have harvested our crop without these women. They have saved my crop (pears) from the picking through the drying process. I certainly hope the camp is here next year."

Contra Costa County:

"Due to the shortage of labor last year, we lost $15,000 on our walnut crop. This year we will not lose any of the crop. The women are picking cleaner than any group that ever worked for us. The spirit of the women is excellent. I am sure you sent us the choicest women. We sincerely appreciate their help."

Contra Costa County:

"Last year the food losses in Contra Costa County, due to labor shortage, were heavy. This year we anticipate none. We appreciate the fine contribution the women have made and feel that they have aided all the farmers in Contra Costa County by their specific contribution to the harvest in the San Ramon Valley."

Fresno County:

"The women have harvested my large crop of Thompson seedless grapes. They picked, turned, and rolled quickly and efficiently. I am well pleased with the results."

Orange County:

"For the past 8 or 9 months we have been using a crew of women as lemon pickers. Their work has proved very satisfactory on the whole and I would estimate that they can put out just about three-fourths as much as men. We have used them only for 5 days a week and 8 hours a day."

Kern County:

"We have a camp of 200 women at Delano and a camp of 150 women at Di Giorgio Farms. The women are used in all sorts of work, such as harvesting plums, grapes, and so forth. The women do excellent work. Volunteer labor was satisfactory in saving a large portion of many of our crops. We believe that this type of labor is successful, and that the use of such labor is essential to the saving of a large part of California's crops."

PART IV.—OREGON'S USE OF WOMEN

OREGON AGRICULTURE

The great variety in types of farming in Oregon, due to the diversity of soil and climate found in the State, makes a demand for practically every kind of labor, from the berry pickers in the western part of the State to the grain-harvest crews in the eastern. Almost every sort of fruit (except citrus) that grows anywhere in the United States grows in Oregon, with the pear, the sweet cherry, the apple, and the prune the most important fruit crops. While some of the tree fruit grown is sold as "green fruit" (that is, not to be processed) the bulk of the fruit and berry crop is processed—canned, frozen, or dehydrated, and shipped all over the world.

Berries are grown extensively and in great variety—strawberries, raspberries, boysenberries, youngberries, loganberries, blueberries, gooseberries, and cranberries.

More hops are grown in Oregon than in any other State. Both English walnuts and filberts are grown, the State ranking first in filberts and second only to California in walnuts.

Almost every kind of vegetable is raised commercially. Beans are important, as are peas, and both are primarily for the canneries. Potatoes and sugar beets are grown in large quantities in a few areas. Oregon's dairy industry extends through western Oregon and the great Willamette Valley. Some of the sugar-beet crops are harvested particularly in the west and coastal counties. All these, with the big grain ranches in the eastern part of the State and the very important sheep- and cattle-raising business in the east-central part, which is not suited to crops, involve practically every kind of farming. Up to the time of the present war, agriculture and lumber were the principal sources of wealth and employment in the State.

LABOR REQUIREMENTS IN OREGON

The farms of western Oregon are described by the farm-labor supervisor of the Extension Service as being similar to New England farms in size and diversity. There are many family-size farms, operated chiefly by the owner and his family, with extra help needed principally at harvest time. "One-man" fruit farms of 5, 10, and 15 acres, where everything but harvesting can be done by the owner, are common. From 1929 to 1941, harvesting was done by the migratory labor that came up from California, "following the fruit," either specializing in certain crops (as cherry pickers) or simply moving north as the season advanced. It is estimated that Oregon always needed 40,000 harvest hands over and above the regular workers.

In 1941 the shortage of migrants began to be noticed, many of them having found more permanent and better-paying work in Pacific coast shipyards and aircraft plants. When the migrants did not appear, the farm placement director of the USES, the Government agency then in charge of farm labor, decided that responsibility would have to be put on "the home folks," stating later that "had it not been for the women and children we should have been in a mess."

In 1942 the use of women and children for harvesting had become prevalent, and much publicity was given to the need of having the help of every man, woman, and youth who could come out and help with the harvests. This they did with a fine spirit. In Oregon there was no women's organization that had taken special initiative in interesting women in farm work. The needs were made known through press, radio, and from public platforms, and thousands of women responded.

THE 1943 PROGRAM

In April 1943, with the provision by the Congress of a farm-labor appropriation, Oregon, like some other States, drew up a contract with the USES to recruit and place farm labor. The Extension Service employed State and county personnel for recruitment, training, and supervising the workers and appointed one to three farm-labor assistants in every county. In many cases one of these was a woman—a school principal or a teacher—who helped in recruiting women and children. It should be remembered that by far the greater part of the harvesters recruited were school children and more attention was given to their recruitment and placing than to that of women. It was not that women were not wanted; they were urged to come out for harvest work, but they were considered able to make their own plans and look after themselves. Then, too, the need of women workers in the canneries was fully as pressing as the need for farm workers, and an active campaign was put on to get women to take care of the fruit as it came to the canneries and packing houses. Fruit once picked cannot be held long, and the work at the canneries was just as essential as that in the fields. The two jobs must go along together and the balance must be kept between help to harvest and help to process important foods.

Oregon also asked for Mexican labor under the contract with the Mexican Government. As a result, Mexicans were assigned to the State to increase the farm-labor force. This, and the fact that many of the crops were below normal in 1943, eased the emergency considerably. Nevertheless, the employment of women for farm work was becoming increasingly common in 1943 in Oregon.

THE WOMEN WHO WORKED

In a State like Oregon, most of the population of the small towns, and many in the cities, have an agricultural background. Great numbers have parents or relatives or friends living on farms. When the emergency call went out for everyone who could do so to come out and help with crop harvesting the townspeople not only knew what it meant but knew how to do the work. Many small-town women and women on small farms had been in the habit of helping to harvest various crops when they had time as an additional source of income. Most of these were housewives; others worked in the various jobs of any small town. Often women with children went for such work as berry picking. Sometimes whole families went. The girls of school age usually went out with the "platoons" of school children, which by 1943 had developed into efficient youth groups. They worked under leadership so well organized that it increased production considerably, to the great satisfaction of employers. Many teachers went as platoon leaders, supervising children's work.

In addition to all the town and city women who had some knowledge of agriculture, many women with no farm experience went out. These included homemakers and business and professional women on their week ends or during vacations. The women employees of the Statehouse and various other State offices gave generously of their Saturday afternoons, Sundays, and vacations. Women and men inmates of State institutions also were sent out under supervision and did excellent work.

At the beginning of the bean harvest, the farm-labor assistants went to the Governor and asked permission to recruit 50 Statehouse employees to pick beans. As many as 150 responded and went out to pick beans from 5:30 to 7:30 in the evenings, also on Saturdays and Sundays. Around Salem alone 5,000 bean pickers were needed.

WORK DONE BY WOMEN

There are certain jobs ordinarily delegated to women and often given the name of "women's and children's jobs." They are, unfortunately, likely to be jobs with the lowest earning possibilities. Whether that is the reason they are "women's and children's jobs," or whether they are natural jobs for women and children, is of little importance. Such jobs employed the greatest number of women.

Bean picking.—Bean picking ranked first in Oregon in the number of pickers needed. From June through October, with the peak in August, nearly 6,000 placements of women as bean pickers were made; probably many of whom there was no record went into the same work. It requires little skill, but involves continuous bending over (unless picking pole beans) and is monotonous.

Pickers fill baskets and empty them into bags, which are weighed and marked with pickers' numbers. There are huge acreages of beans, and in one area alone 10,000 pickers were wanted.

Hop picking.—In 1943 Oregon produced over 50 percent of the United States output of hops, growing some 17,000 acres. This crop required between 50,000 and 75,000 pickers in August and September. The USES reported about 5,200 placements of women, but most pickers got their own jobs. (When it is known that there are more jobs than workers, few workers take the time to go to an employment office.) Two persons pick a row together, one on each side. A good picker uses both hands, keeping her basket right under the hops being picked. The picking baskets are large, holding 25 pounds, and are dragged along the row until filled, then emptied into a large basket. Leaves must be kept out of the baskets and hops must not be dropped on the ground.

Berry picking.—The berry pickers gathered all varieties of berries—strawberries, loganberries, boysenberries, youngberries, blackberries, red raspberries, and blackcaps. Strawberries, though having a smaller acreage than before the war when labor was plentiful and cheap, are still an important berry crop. Picking strawberries is hard work, as it requires constant stooping and careful handling of the fruit. One can *pick fewer and earn less* than in any other berry picking except possibly red raspberries. At one area where a count was made, 468 of 534 pickers were women and children and 66 were older men. About 3,700 placements of women as berry pickers were reported by the USES.

Cranberries were picked almost entirely by women and children. All are picked by hand, as rakes are believed to injure the vines and fruit and do not pick clean.

Cherries.—Cherry picking, which requires the use of ladders, is often considered not suitable for women and children. Yet due to the anticipated shortage of men, Oregon decided that children of the platoon groups were capable of learning to put up ladders and to pick the cherries. Ladders (three-legged and from 8 to 16 feet high) must be put up so that they will not hurt the trees and will be close to the fruit. Cherries are picked into 8-quart buckets, which are provided with hooks for hanging on branches or ladders. When buckets are full, pickers go down and empty them into lug boxes. There is a definite technique in picking sweet cherries so as not to break the spurs. This takes time to learn. Sometimes when cherry trees are very tall, men pick the tops from high ladders, being paid an hourly rate, and women and children pick the lower branches.

Cherry pickers consider themselves specialists. Cherries for eating or brining are picked just as they begin to show color, before fully ripe, but cherries for the canneries are picked when ripe, and therefore have to be handled quickly and with care.

Last year there were many migratory workers in the section of Oregon along the Columbia River and in the region around Salem, which alone needed 5,000 pickers. Because of a light crop in California, the migratory pickers reached Oregon before they were needed and waited for the crop. As a result, inexperienced women and children were not used to any great extent.

Apricots and peaches follow the cherries, but professional cherry pickers do not stay for these harvests. Both of these were light crops in Oregon as in California, and while some women picked and thinned fruit, the numbers were not large.

Apples and pears.—In the Hood River Valley and other orchard sections along the Columbia River the apple and pear crops were below normal. Many migratory workers helped with the harvesting of apple and pear crops. Many local women also assisted with this harvest. Various growers had camps or camp sites where workers put up their own tents or trailers. Mexican nationals also were there for fruit picking and were satisfactory. In the Hood River area three buses a day were run from The Dalles to the orchards, carrying women and platoon children. These groups were taken to the young orchards where the trees were smaller and there was not so much ladder work. An Extension Service official said the objection of farmers to having women on tree crops was the moving of ladders, but he could not say that it was justified. The canvas apple-picking half-bushel bags were considered too heavy (24–25 lbs. when full) for women to use on ladders. These canvas bags, hung from the shoulders and fastened around the waist with webbing straps, are used universally in the West. In the East, however, one-half bushel and one-fourth-bushel baskets or sacks, with an iron hook to hang on limbs while picking, are generally used. One-half-bushel baskets weigh the same as sacks.

Prunes, English walnuts, and filberts were other crops employing large numbers of women harvesters.

Dairy work.—Farmers in Oregon, as in California, were unwilling to employ women in dairy work, and did not believe women could do such work. Once in a while they would take a married couple. At a meeting of dairymen (of whom two were women) called by the YWCA General Secretary to discuss the possibilities of employing women, there was a stone wall of opposition. Besides the belief that women could not do the work, the housing of women workers was a problem that the dairymen were not interested in trying to solve.

The Extension Service held a training course at the State College at Corwallis, at which 5 women and 6 coeds were trained for dairy work.

Platoon leaders.—One job for which nonfarm women were used was that of supervising school children. Oregon school and farm authorities had realized that young workers are much more effective when working in rather small groups under the supervision of a responsible and trained adult.

Women were sought for these jobs. Often they were teachers, members of parent-teacher associations, or mothers of children going out. These platoon leaders were paid by the farmers a dollar an hour. They not only watched the work of the children, saw that they kept at work, but on occasion drove the buses. The platoon children generally worked 6 or 7 hours, and these hours suited better the women with home responsibilities who could not go out for 8 or 9 hours plus time consumed in transportation.

Other farm work.—Nonfarm women undoubtedly were employed in greater numbers than ever before. In the seasonal-crop harvests, the percentage of women and youth is constantly increasing and that of men decreasing. Women are doing new jobs in agriculture all the time. A girl taxi driver spoke of having worked at picking up brush in the orchards. Other girls drove trucks in the wheat fields. A good many worked on the peppermint farms, where peppermint is grown to be distilled for medicinal or cooking uses. Some were employed in the pruning and tying of berry canes; in the cultivation of vegetables; in training hops, in haying, in helping (rarely) with combines or pea viners, or in tractor driving. It is not possible to say how many nonfarm women worked nor how varied were the jobs.

EARNINGS

Many times, in inquiries about women's earnings, the sum mentioned was the amount a regular migratory worker could earn. The effort here is to show, instead, what the inexperienced, nonfarm women earned.

Hourly rates reported were from 60 to 75 cents. More may have been paid to one who knew her job. But the nonfarm harvest workers were seldom paid hourly rates on any job that could have a piece rate. The inexperienced worker went in at the piece rates for regular workers and could not equal the professional in production, though she was generally regarded as a more careful worker.

Bean picking paid 2¼ cents a pound, with ¼-cent bonus for those remaining throughout the season. One valuable record showed that the average amount picked by adult women was around 190 pounds a day, yielding about $3.75 a day (or only 2 cents a pound) as average earnings for all women workers in an 8.3-hour day. It is not known, however, how many of these women were experienced. At a camp set up for migrant or other bean pickers near the coast, the WLA leader reported that the women were not satisfied with their earnings and would not stay. Few earned as much as $2 a day. What factors brought those earnings down is not known. Another estimate for women was $3 a day.

Strawberries and other berries.—Few migrants nowadays go to Oregon to pick strawberries. More berries were picked by children than by anyone else, and the women who picked generally had seasons of experience. The piece rate was 3 to 4 cents a pound. Women with several children often picked as a family. A condition that seems not quite fair in berry picking is that the piece rate is about the same for all berries (except raspberries, that pay a cent more) though a worker can pick 2 to 2½ times as many boysenberries, youngberries, or loganberries in a given time as she can strawberries or raspberries.

Children were reported as earning less than $1.50 a day. Nonfarm women earned more but "not very much more." One woman office worker said she earned 75 cents in half a day. A city man and wife said they earned $5 together in a day at picking raspberries; they worked hard but did not have good picking. Of course there were rapid pickers who made more, especially if they had good picking. Experienced adults earned $4.25 a day.

Cherries.—In 1943 cherries paid 3 cents a pound. That is a big increase over the three-fourths of a cent or one cent paid before the war. Now a top-notch professional cherry picker can earn, so the county agent reported, $18 to $20 a day; an average man picker, $12 to $14 a day; a good man, inexperienced, $6 to $8 a day. There was no report on nonfarm women, but cherry pickers were earning "good money."

Prunes paid 15, 20, and 26 cents a lug or field box.

Walnuts and filberts paid 1½ cents and 3 cents a pound, respectively.

Peaches.—Women who worked in the peach orchards got good pay, but not many were needed. Those who thinned fruit from the ground got 65 cents an hour, those who thinned from ladders 95 cents. They worked an 8- or 9-hour day, the latter yielding earnings of $5.85 or $8.55 according to job.

Pears.—The piece rate for picking Bartlett pears in Oregon was 15 cents a 40-pound box. One grower had Mexicans who were paid 70 cents an hour and picked about 70 boxes in a 7-hour day, but when they were put on piece work production jumped to 120 boxes a day. Nonfarm women should have earned $4 and $6 a day. Some earned more.

Apples.—Apple picking, like everything else, has gone up in cost. In 1943 the piece rate was 12 to 15 cents a box (in the 30's it had been as low as 3½ cents). A good many nonfarm women picked, and could earn $5 to $8 a day. An expert professional man picker, it was said, could pick 200 boxes in 7 hours. That is close to a box every 2 minutes, an almost incredible speed that few if any men could keep up.

Earnings in Other Farm Work.

What nonfarm women earned in other farm jobs was difficult to ascertain. Hourly rates were 60 to 95 cents. Girl truck drivers got $9 a day, and no doubt many individuals, in jobs they found for themselves, got higher pay than ever before.

Here, as in California, there were no definite data on the earnings of nonfarm women. The head of the Department of Farm Management had prepared the only factual material yet found on the amount of work done by women and youths of various age groups, with and without experience.

HOURS

The regular working day on farms in Oregon was reported to be 10 hours. It is probable that the nonfarm women who went out to harvest crops did not ordinarily work more than 8 or 9 hours. In some jobs, as cherry picking, when the heat was intense in the afternoon (100°), the pickers' work began at 5 a. m. and stopped by noon. In hops, 6 hours was given as the usual day. As the women had to be conveyed to the job every day and brought back at night, that added from 1 to 2 hours to their day. Also, a complaint frequently registered was that the farmer, after the harvest workers stopped for the day, still had to do his chores before he could drive the workers back, during which time the women and children had to sit around and wait, so their arrival at home might be delayed till 8 o'clock or later. Where special buses or private cars were used, this trouble did not exist.

Rest and Lunch Periods.

There were no designated rest periods. Whether or not a woman or girl paused to rest depended on how she felt or how anxious she was to earn as much as possible. As far as could be learned, there was no fixed hour or amount of time for lunch. In the study made by Dr. Mumford of 19 farms and 704 pickers, the time taken for lunch was 15 to 30 minutes. Few if any piece workers would take the one hour universally recommended for women doing hard physical work.

DRINKING WATER

Where children, especially platoon groups, were sent out under the authority of the farm-labor program of the Extension Service and the schools, it was required that the farmers have a supply of pure drinking water available for them. As the children would not use individual paper cups, a clean barrel, with a spigot at the bottom, with the barrel placed on a box and tilted up, was reported as one sort of home-made bubble fountain that was effective. Here again, since it was impossible to visit the workers on the job at the time of the survey, it cannot be stated how carefully the precautions with regard to safe drinking water were carried out, but observation and reports indicated that here, as in almost every State visited in the Women's Bureau study, much remains to be done to insure a supply of good drinking water for workers in the fields.

SANITARY CONDITIONS

The sanitary conditions in the fields were reported as "improving," but without doubt there is room for much more improvement. The fact that the platoon children would not be sent out unless there were toilets in the field implies that many had no such facilities, as was indeed the case. Where there were toilets they generally were simple board structures, unroofed and unscreened. One camp set up for bean pickers (about 400) had "two toilets for men and two for women," though 95 percent of the workers were women and children. No standards were set up for women over 18 years of age.

TRANSPORTATION

Transportation was reported as one of the chief difficulties. For short hauls farmers sent their trucks to cities or towns for workers. Where they did not have trucks available, or where the workers were to be distributed to several farms, school buses often were used, the cost of gasoline and driver being paid by the farmers. The children and adult workers generally paid their own transportation costs. Sometimes a woman had a car and could bring 5 or 6 workers with her.

INSURANCE

There were no insurance provisions for women workers, except as individual growers might so provide.

PART V.—WASHINGTON'S USE OF WOMEN

WASHINGTON AGRICULTURE

Like Oregon, Washington before the war was a State whose principal industries were agriculture and lumber. From the beginning of the war, shipyards and airplane factories along the coast and other war industries have offered new opportunities to every sort of worker, making great inroads into farm labor, and this, of course, in addition to the draft. Washington leads the United States in the production of apples, and produces more pears than any other State but California and more cherries than any other but Michigan.[4] It ranks third in the production of asparagus, fourth in the production of cranberries.

In the rich farming section of the west are grown strawberries, red raspberries and blackberries, some loganberries, sweet and sour cherries, and Italian prunes.

Beans, carrots, beets, and potatoes all are important vegetable crops. These and many others of less importance are grown along the fertile valleys of the west coast and in the southern part of the State.

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[4] Agricultural Statistics, 1942, Department of Agriculture, pp. 224, 234, 257.

In the production of cannery peas, Washington ranks fourth in the United States. In recent years sugar beets have been grown to some extent.

The eastern part of the State is given over chiefly to wheat and other small grains, some cattle ranches, and such crops as hay, alfalfa, and cannery peas that can be taken care of chiefly by machinery.

LABOR DEMANDS

All the crops but those requiring heavy machinery could use large numbers of women as substitutes for men, and more and more women are being so used. The farms are for the most part small. There are many berry farms of 5, 10, or 15 acres, and other small-fruit farms of 20 to 30 acres. One man with the help of his family can take care of such farms except during harvesting season.

In the years of depression and before the war, the small farmers had not been able to make much money in berries and many either sold out or went into defense industries when the chance offered; so while in earlier years they had a much larger berry acreage and large groups of migratory workers, for the last few years migrants have not come, and more and more dependence has had to be placed on local women and children for harvesting.

Beans were the crop that produced an acute labor demand in 1943. Beans must be picked the day they are ripe or they get too large. Vines have to be gone over several times. Given a rain followed by a few warm days and the picking crisis becomes acute. Here again, women and children were called on for much of the harvest work.

The Yakima Valley, one of the richest agricultural sections of the United States, is the center of the farm-labor demand, for both fruits and hops. The Wenatchee Valley is the second great fruit section. Ordinarily thousands of migrants have come here annually for the fruit and hop picking. As migrants went into war industries, so also did many of the local residents who had lacked employment in the off season for agriculture. The supply became short not only of harvesters but of labor for the spring work of pruning, thinning, and spraying the orchards. Sugar-beet fields needed workers. Asparagus had to be cut, hops trained, and in the fall the harvesting made its heavy labor demands.

THE DEMAND IN 1943

In 1943 the program of the USES for recruiting farm labor and utilizing nonfarm workers was under way when the Extension Service was made the agency for handling farm labor. A contract was made between the USES and the Extension Service whereby the latter did the recruiting and the former the placing in 1943. The shortage of farm labor had become apparent in 1941. In 1942 the acute shortage had caused alarm and State-wide plans were under way in 1942–43. The Governor had appointed an emergency committee under the State Secretary of Agriculture, with a representative from the USES and an executive secretary. Chambers of commerce had appointed committees, the various cities had women's committees, all working to get more farm labor. The concentration of effort was, however, on school children for harvest work. They were available in large numbers, and could easily be directed into farm work as their war effort. Competing with agriculture for women workers were the huge canning industry and the fruit-packing houses. Their peaks come at about the same time as the harvest peaks, and the bigger the fruit and vegetable crops the more workers are needed to see that all this produce is taken care of and not allowed to spoil. That is something every homemaker can understand. So at the same time that women were being sought for harvest work there was a high-powered publicity campaign going on to get women to come into the canneries. The need was so great that women could come for any time they chose. An evening shift of 4 hours—morning or afternoon shifts—"come any time as long as you come." Women were sought by press, radio, sound machine, telephone calls, and personally written appeals. While enough women responded to take care of the fruit, many more could have been used to advantage.

Meantime, the Extension Service, through its WLA leader, the assistant farm-labor supervisor, was planning a State-wide campaign for women for the essential farm work. Quoting from her report—

> The State was classified with 12 critical labor-shortage counties which needed additional cooperation and supervision to fulfil the requirements during the seasonal peak load of labor demands. Of these counties, 6 were served by city farm-labor committees who worked in cooperation with the county farm-labor committees. These city committees had been established before the Extension Service was delegated the farm-labor responsibility. It seemed advisable, to avoid confusion, to work out a State-wide program that would fit in with these committees already established and having women's programs well under way.
>
> Cities having women's organizations in operation from which an active WLA program was carried out in the State:
>
> Yakima—Food-for-Victory Program.
> Seattle—Women Victory Volunteers.
> Wenatchee—Victory Crop Volunteers.
> Tacoma—Women's Victory Volunteers.
> Spokane—The Victory Crop Corps.
> Mount Vernon-Skagit—Victory Harvest Campaign for Victory Harvest.
>
> These volunteer committees carried out an effective recruitment program and gave full cooperation to the State farm-labor staff. The recruitment was timed to fill the needs of the State, county, and local community seasonal-crop peak-load requirements. Publicity laid emphasis on recruitment needs as specified by the county agent and his county farm-labor committees. This publicity invoked three newspapers and radio and local telephone volunteer committees.
>
> State-wide recruitment for peak loads was accomplished by various organizations, such as the State Federated Women's Clubs, the Business and Professional Clubs, the Altrusa and Zonta Clubs, the State Department of Education, the Federal Works Agency, and so forth. These assisted in giving State-wide and local support to the farm-labor program. These organizations were very responsive to the program and pledged support in the recruitment and development of the farm-labor program in local communities for the harvesting of farm crops.
>
> During the early part of September, the colleges and universities in the State were visited for the recruitment of students to be used in acute emergencies in the harvesting of the apple crop of the State. In some of the colleges and universities the members of the student body set up standard working conditions they wanted established before they were willing to work in the apple harvest. The majority of these requirements were reasonable and acceptable to the growers. However, some of the requirements needed adjusting on the part of the grower as well as in the usage of this emergency labor.
>
> An educational training program was planned to assist in developing a better understanding of the job needed to be done and in improving attitudes toward the problem as a whole. The educational program was planned to be presented

to the student body of each college and university 3 or 4 days before workers were called on for the emergency job.

Between 1,200 and 1,500 students volunteered to serve in this emergency requirement, the college and university faculty members pledging their full cooperation.

The weather conditions, volunteer help in cities and local communities, and the assistance of Mexican workers were equal to the labor-peak load, so the emergency labor supply was not needed in that year. The student-body members and faculty members of these colleges and universities were sent letters of appreciation for their cooperation and interest in helping to meet farm-labor program requirements.

THE WOMEN WHO WORKED

The report of the WLA leader sums up the types of nonfarm women who worked in the harvest as follows:

> Women of many professions, such as teachers, clerks, stenographers, librarians, waitresses, nurses, homemakers, instructors in colleges, lawyers, technicians, and so forth, were among the groups in the State of Washington who volunteered their services in helping with the harvesting of crops.

WORK DONE BY WOMEN

The work done by the women of Washington was similar to that of California and Oregon. Chiefly it was harvesting fruit, berry, and vegetable crops. It was practically all done on a day-haul basis.

In the Spokane Valley women did an excellent job assisting in the harvesting of fruit, the cane berries, and vegetable truck crops. The Victory Crop Corps of Women were very conscientious workers. They were praised highly by the farm folk as well as by the Extension Service.

The apple crop of Washington State, one of its major crops, was harvested by the combined efforts of young people, men, and women. In some sections of the Chelan County area nearly 50 percent of the apple crop was picked and packed by women.

Few women were working on year-round jobs on large poultry farms. Several worked on dairy farms as helpers in the milk houses and the delivery of milk. Two women served in the capacity of Dairy Herd Improvement Association testers in the State.

As might be expected, women did more orchard work here than in other States. They thinned soft fruit and apples. They even sprayed orchards. One woman was observed spraying apples from a hose attached to a laid-down pipe system as casually as a city woman might water a lawn. (It is, none the less, a hard dirty job.) A woman who managed her own apple, pear, and asparagus farm of about 140 acres said that her foreman's wife drove the big John Deere tractor with a 600-gallon spray rig for spraying her orchards, which were on hilly ground, and also entirely managed the asparagus fields, hiring the pickers, supervising the sorting, and doing the selling. Naturally, she had much farm knowledge and experience, but took active part in all this work only in the war emergency.

Supervisors.—In Washington as elsewhere, a really important job for women that it was impossible to find enough women to take was the supervising of groups of children who went out on day haul or from the youth camps. It has been found, in every State that uses children, that only when well supervised is the work they do satisfactory.

Someone is needed not only to take instruction from the farmer as to what he wants done but to see that the children pick fruit properly without damaging the trees and do not indulge in fruit fights.

Supervisors are needed also to look after the children's interests and see that they get a fair deal and considerate treatment. Many children went out who would not ordinarily be sent alone for such work, and were "bossed" by men who little understood the handling of youngsters. If children are to be used, attention must be given to good organization and supervision and to the education of the farmers as well. A case in point reported by a berry grower was that of a neighboring grower who insisted that the children fill the berry baskets heaping full, instead of level as they must be for shipping. The grower then skimmed off the extra mound and got several crates of berries during the day's pick for which he paid nothing.

The Extension Service would gladly have arranged for the training of supervisors had the need been recognized and candidates secured in advance of the need. In fact it did, in at least Spokane and Tacoma, have such an afternoon and evening session.

The better supervisors were those who had had experience with groups of children, such as mothers, teachers, scout leaders, or camp counselors.

EARNINGS[5]

Wage rates for experienced women were 60 cents, 75 cents, and even $1 an hour. But these rates were not paid to inexperienced nonfarm women, who worked for the most part at piece rates and did not, generally speaking, earn large amounts. Their speed, concentration, and endurance, if they worked for occasional days only, were not up to the high-pressure work rate necessary to earn high pay.

Berries.—Berry pickers were paid $0.90 to $1.25 a crate of 24 pint boxes. (In depression years the rate was 40 cents or 50 cents, and 70 cents was considered good pay.) "A good woman picker in an 8- or 9-hour day should pick 3 to 4 crates." Yet one man volunteer said he made only $1.50 in one day picking raspberries, though he should have made $5 if the picking had been good. Nowhere were production records available, or any records of earnings.

Berry pickers have traditionally been family groups with several children, all of whom can pick. Regular berry pickers usually work long days, starting sometimes as early as 4 a. m. and working until dark, in order to earn as much as possible. From the information obtainable it appears that less money was earned at berry picking than at any other job.

Apple picking.—Here again piece rates had gone up. One man said he remembers when 3 cents a box was the going price. In 1942, 6 and 7 cents a box was paid; in 1943, 10 cents was the prevailing rate and 15 cents was paid in some cases. Expert apple pickers (men) could earn $18 to $20 a day; Mexican greenhorns, $6 to $8. Women were reported to earn 60 percent as much as men, but here again no production records were available. On that basis the inexperienced nonfarm women might have earned $3 to $5 a day. A Washington University official reporting on the apple-picking work in 1943 said that the typical girl student came back with $1.50 or $2 over and above her expenses for 4 days (for railroad fare and board these were from $15 to $17), so they may have earned $16 to $20 in 4 days, or $4 to $5 a day.

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[5] In general, the cooperating committee organizations, even the farm-labor supervisors and USES, had nothing to say about rates of pay or earnings. As they were practically the only persons who could be consulted during the off season in which this survey was made, earnings data for nonfarm women are incomplete and unsatisfactory.

Beans.—It was hard to find out what nonfarm women earned on beans. One committeewoman said they could earn $2 a day easily, and that many earned $5. (Whether or not they had had previous experience was not known, nor how long they worked.)

HOURS

Here again, in the matter of hours worked, there were few or no records. There were no definite hours, and since the work was all at piece rates many workers varied their hours to suit their own feelings or abilities. Supervisors who went out in farmers' trucks with children on day haul often were picked up as early as 6:30 a. m. and children were expected to be returned in 8 hours. Occasionally, the drive home was after the farmer had finished his chores, though the women and children might have stopped work some time before. Those who went in their own cars may have made it a 6- or 7-hour day.

The regular migrants and the local people who came in on their own initiative worked long hours. In the Puyallup Valley, it was said, people put in as much as 12, 14, and 15 hours a day. This is a large berry-growing region. The usual day for full-time nonfarm workers might be said to be 9 to 10 hours.

Rest periods.—No rest periods for adult women workers were reported or even mentioned anywhere. Women were considered able to make their own arrangements with the farmers, and to take rest if they needed it.

SANITATION

Drinking water.—From all information obtained, it would seem that the matter of pure, clean drinking water at working places needed considerable attention. The customary method was to take water out in a milk can. Children were supposed to bring their own cups, but few did so. The same doubtless was true of women, as has been the general experience. An effort was made to have State inspectors pass on the water at farms to which camp children were sent, but there were so many farms and so few inspectors that all the farms could not be covered.

Sanitary arrangements.—At the farms where women and children day workers were employed, these were reported generally as unsatisfactory. Often only a board privy, unroofed and unscreened, served everyone. In some cases there was no provision at all.

HEALTH AND SAFETY

As there were no camps for women there were no requirements as to physical fitness. Women made their own decisions as to whether or not they were physically able to do the work. In the one camp for youth, the doctor's certificate was waived, not because it was considered unnecessary but because of difficulties in securing it.

Besides such usual farm hazards as falls, sunburn, insect bites, and so forth, there was mention by some women apple pickers of unpleasant effects of the heavy spray that covered the apples. They said it dried out their skin, made an irritating dust in the air, and got into their clothes.

PART VI.—CONCLUSIONS

SCREENING OF WORKERS AND FARMERS

During the 1943 season, in spite of a subnormal crop, more women than ever before worked in agriculture in the Pacific Coast States. In California the Extension Service estimated that 15,000 nonfarm volunteer women helped on farms because of the war emergency, and that about half of these were placed through the farm-labor offices. In the two other States, also, thousands of nonfarm women helped with the harvesting.

At time of survey (the early months of 1944) the prospects were that the crops needing women harvesters would be much larger than in the year before. More women would be needed both in the harvests and in the canneries. While the majority needed for harvest work probably would be placed through the farm-labor offices, many were to be recruited through various sponsoring agencies and some would find their own jobs through advertisements and other publicity measures.

A thoughtful and intelligent farmer in Washington said that "volunteers (i. e., inexperienced nonfarm women) should be disillusioned about what harvest work means, and that farmers must be educated to treat their help right." That farmer summed up in a few words what all promoters of the employment of women on farms know must be made clear to recruits, to placement officials, and to farmers.

Too often the women have no idea what the work is going to be like, how hard physically it will be for women whose muscles are soft from lack of physical exercise. That is why young women, fond of sports and athletics, or women who have done work calling for some physical effort, often find it easier to accustom themselves to active farm work than older women or women from sedentary jobs.

It should be a part of the duty of every farm-labor recruitment officer to understand as completely as possible the job for which he or she is recruiting workers, and to explain, equally fully and carefully, just what it means in physical exertion and endurance, so that workers who will stay only a day or two and decide they don't like it may be eliminated in advance.

The farmers should be urged to give their inexperienced women workers more careful explanation and instruction about the work to be done. Good farmers are not always good teachers. Probably the Extension Service Agricultural Agents can do more than anyone else to impress on the farmers the importance of induction, getting groups of farmers together and demonstrating good and bad techniques in starting inexperienced workers on new jobs.

Through its educational functions the Extension Service can do and is doing much to make farmers realize that to succeed with this new type of farm worker they must have patience, courtesy, and kindness and take time to instruct women carefully in the work they are to do. They must not take advantage of women's inexperience by assigning them to bad fields overrun with weeds, or orchards left rough and weedy. They must not expect women to carry heavy boxes long distances, nor must farmers permit mistakes to be made in checking up the amount of work done. Workers at one camp said of an employer, "We always thought he cheated himself every pay day, he kept such careless records"; while another said, "He always cheated the girls, sometimes several dollars." They did not want to be cheated nor to cheat; they wanted just the right pay for the work done.

SANITARY FACILITIES

In all three States, sanitary provisions for field workers were almost universally inadequate, often entirely lacking. As one man said, "Boys take one corner of the field, girls another." This is, perhaps, a matter of education of the farmer and of stipulations from sponsors or placement offices that suitable provision be made if workers are to be supplied. It is doubtful that, if a State passed regulatory measures, there would be any possibility of inspection and enforcement under present conditions. Where women have to work all day or half days in the areas far removed from permanent toilet facilities there should be adequate provision in the field or orchard of portable privies, screened, roofed,[6] and tight.

WASHING FACILITIES

Facilities for washing should be provided near where the workers eat lunch. In the climate of the west coast during the months in which rain never falls, an outdoor wash bench with basins, soap, water, and paper towels would be adequate and inexpensive. Few if any farmers eat their dinners without the refreshment of washing hands and face. Yet few provide such opportunity for their harvest workers. A Red Cross first-aid kit should be supplied in the fields and someone who is a qualified first-aider should be on hand and known to the workers as the person to go to with cuts, scratches, and other minor injuries.

DRINKING WATER IN FIELDS

Except for Oregon's tipped-up barrel with a spigot, which afforded a sort of home-made bubble fountain, nothing was heard of any effort to provide clean or cooled drinking water in a region where the heat during much of the harvest is terrific—90° to 100° or more, many times. In some cases water was carried to fields in receptacles from which workers drank or the workers used a common cup unless they took their own. This is a practice that should be remedied. Desert water bags, ollas, and canteens are inexpensive and practical, with individual paper cups, as are large thermos cans, like milk cans, with a faucet.

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[6] If rain-proof roofs are not needed, screened roofs are.

HOURS

Throughout all these States a working day of 9 hours, rarely longer and sometimes 8 hours, prevailed for nonfarm women (though not for migrants). Sometimes on special crops the day was shortened. It did appear, however, that where the pay was not an important factor in their service, and where at best the earnings would be small, after women had earned their board there was a tendency to ease up and not work the full day. However, at a camp where earnings over and above board really amounted to something, though women at first asked for an 8-hour day they decided, after the matter had been taken up and practically agreed on, that they would rather work the 9-hour day and get the extra hour's pay. Here, as in the East, women seemed able to work an 8- or a 9-hour day, though there is no information as to output under the two schedules. If women work a 9-hour day they should have a full hour for lunch, which was seldom taken by piece workers. An hour for lunch was reported at two camps where the workers were trucked back to a hot meal, but the hour included transportation. Experience indicates that women's working efficiency in a 9-hour day is increased by a 15-minute period of complete rest and relaxation in mid-morning and mid-afternoon.

Where workers can go to a comfortable spot, wash, and sit in the shade for a leisurely lunch, their after-lunch efficiency will be higher than that of workers who snatch 15 minutes to eat and then go right on working.

In these States the theory that adult women are free agents able to take care of their own working conditions seems in some cases to have had acceptance over the idea that to secure a new group of workers in an industry care must be taken to see that working conditions are such as to attract and hold them. Here again the farmers and all others interested might well consider what has been demonstrated in war industries that have taken women on for work new to them, namely, that a good induction, a thorough understanding of the work to be done and its part in relation to the whole, patient supervision at first, and good working conditions will develop women more quickly and efficiently into valuable workers than the old policy expressed in "throw them in and they'll learn to swim."

PRODUCTION AND EARNINGS

It was very difficult at the time of year when this study was made (February to April 1944) to secure adequate data on women's production or earnings in 1943; particularly for the day workers, who were the overwhelming majority. Some camps that had wage data did not have complete or uniform records. Even to secure the "prevailing rates" on piece work was difficult. Hourly rates often were given, but few of the emergency farm-service women worked at hourly rates. Harvest work was almost entirely piece work.

The wage data given on the foregoing pages, therefore, represent the best that could be secured from sponsors of the adult women's camps, from individual women workers whose reliability was agreed to by the AWVS or the WLA, and from the reports of the WLA leaders of the Extension Service.

They do not represent the earnings of the regular and the migrato farm workers, nor do they represent the large group of more or l experienced volunteers who quite customarily help with harvest wo by the day in their own neighborhoods. Rather they are the earnin of women who worked daily, from camps, over periods of from 1 to 6 weeks, of whom some were "green" and others, having worked for several weeks and become accustomed to it, were quite skilled, but all of whom were women who had gone into agriculture as a new venture.

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ARE WE WELL FED?

A Report on the Diets of Families in the United States

By HAZEL K. STIEBELING . . . . *Senior Food Economist*

FAMILY ECONOMICS DIVISION, BUREAU OF HOME ECONOMICS

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Acknowledgments:

THIS REPORT is based on a study of family food consumption made by the Division of Family Economics, of the Bureau of Home Economics. In the preparation of this report, the author had the special assistance of Day Monroe, Chief of the Division, Helen S. Mitchell, Consultant in Nutrition, and other staff members. Help was also given by Ruth Van Deman, Chief, Division of Information, Bureau of Home Economics, and by Mary Taylor, Editor of Consumers' Guide, Consumers' Counsel Division, United States Department of Agriculture

NUTRITION IS A NATIONAL PROBLEM

STRONG and alert nations are built by strong and alert people.

Strong and alert people are built by abundant and well-balanced diets.

No nation achieves total strength unless all of its citizens are well fed. To be well fed means more than filling the stomach with foods that appease hunger. It is more than getting the food that barely protects the body from disease due directly to poor diet. It is having each day the kind of food that will promote abounding health and vitality.

Our Nation's goal is that everyone shall have a diet adequate in every respect for good nutrition. As compared with many countries, ours is rich in food. But we still are far from being a nation of well-fed people.

"Nutritional diseases," says an eminent authority of the United States Public Health Service, "in all probability constitute our greatest medical problem, not from the point of view of deaths, but from the point of view of disability and economic loss."

Studies summarized in this report indicate that millions of people in this country are living on diets that are below the safety line. This does not mean that all of these people are hungry. Some often are. Nor do all that subsist on poor diets show symptoms of pellagra, beriberi, scurvy, anemia, or other well-defined disease. For every case of actual illness traceable to poor diet there are probably hundreds of borderline cases.

Getting along on poor diets for weeks at a time takes its toll in chronic fatigue, shifting aches and pains, and certain kinds of digestive disturbances. While such discomforts may not keep a person in bed, they cut down his efficiency on the job. Inadequate diets prevent a child's normal growth and development. They lower a person's natural resistance to infection. They destroy, too, his sense of well-being, his joy in being alive and well and able to work.

The Nation's families need good diets to safeguard their own health and to strengthen the defenses of the country.

EVERYONE NEEDS A MARGIN OF SAFETY

IF ENGINEERS are not sure that a bridge is more than equal to whatever demands traffic may make on it, the law in most communities requires that the bridge be posted. "Unsafe for loads exceeding 10,000 pounds," the sign may read.

This does not mean that the bridge would surely collapse should one such load cross. It means that crossing the bridge in the face of warning endangers the person and is against the public interest.

As a matter of policy, bridge builders and bridge inspectors insist on having a wide margin of safety in their structures.

Nutritionists act on much the same principle in appraising diets. They label as "Unsafe" or "Poor" any diet that fails to furnish the average amount of each of the nutrients needed just to maintain the body. The person who lives continuously on diets providing less than this minimum may not be able to stand up to the stresses and strains of living.

On the other hand, nutritionists call a diet "Good" only if it supplies an adequate margin of safety above this minimum in protein, minerals, and vitamins.

Laboratory experiments and human experience indicate that proper diets not only can lengthen the entire span of life but that they also can lengthen the active, fruitful period, postponing the effects of advancing age. They can make old age itself more healthful, less a period to be looked forward to with dread, and less of a burden on society.

WE CAN MEASURE OUR COUNTRY'S FOOD HABITS

THE NUTRITIVE QUALITY of diets in the United States varies greatly. This is shown by an analysis of family food supplies recently made by the United States Department of Agriculture.

The analysis was based chiefly on facts collected by the Departments of Agriculture and Labor in 1936–37 as part of a large-scale study of our American ways of spending and living at different income levels. This study was made by the two agencies mentioned, in cooperation with the National Resources Planning Board, the Central Statistical Board, and the Work Projects Administration.

Representative nonrelief families, each with a husband and wife, both native-born, cooperated in this study. The families differed widely in income. They lived in various parts of the country. Some lived on farms, some in villages, others in cities.

The method of collecting the information about diets was as follows: A trained worker helped the homemaker make a record of the kinds and quantities of food on hand at the beginning of the study. Each day they weighed the foods brought into the house for family meals and listed the name, age, and work of every person eating from the family larder. After 7 days another inventory was taken of all of the food on hand.

From these data the quantities of each kind of food that the family had during the 1-week period were determined, and the nutritive value of the diet was computed from average figures on food composition. Each family's record was then compared with standards of what would constitute an adequate diet for the persons included in the group. Each diet was classified as good (or excellent), fair, or poor, as described on the following page.

WHAT IS A GOOD DIET?

DIETS that a nutritionist would call good must meet certain specifications for food value. These are the yardsticks used in this report to classify diets:

Excellent diets meet in all respects the specifications of the liberal standard as shown below.

Good diets exceed the minimum standard by at least a 50-percent margin but by less than 100 percent in the case of the vitamins. In this report excellent and good diets are classed together.

Fair diets meet the minimum standard in all respects but exceed it by less than a 50-percent margin.

Poor diets fail to meet the minimum standard in one or more respects.

FOOD VALUES CONSIDERED		THESE ARE THE QUANTITIES PER MAN PER DAY	
		In liberal standard	In minimum standard
PROTEIN	grams	75	50
CALCIUM	grams	0.68	0.45
PHOSPHORUS	grams	1.32	0.88
IRON	milligrams	15	10
VITAMIN A	International Units	6,000	3,000
THIAMIN (VITAMIN B_1)	milligrams	2.0	1.0
ASCORBIC ACID (VITAMIN C)	milligrams	60	30
RIBOFLAVIN	milligrams	1.8	0.9

SOME POINTS TO REMEMBER

FOUR POINTS to keep in mind in interpreting the facts from this study are these:

1. Information on the minerals and vitamins in many foods is still tentative and may change as science goes forward. Many of the values used in the computations tend to be high because losses due to storage and cooking are not well known.

2. The potential nutritive value of foods brought into the house for family meals may be higher than the value of food actually eaten. It is almost impossible in an extensive study to obtain from families the information needed to make adjustments for household waste of edible food.

3. The diet studies covered only a single week. Diets vary in nutritive quality from week to week and from season to season. Some families with diets classed as poor one week may in other weeks have diets that are fair or good, and vice versa. Undoubtedly, the proportion of families with diets that are always in the "good" class is less than our figures show, and the share with diets that would fall in the "poor" class part of the time each year probably is much greater.

4. Knowledge of human food needs, especially for minerals and vitamins, is far from complete. Were the same diet records to be evaluated at some future date when such knowledge is more advanced, it is probable that somewhat different conclusions would be reached. Nevertheless, the comparisons made among different groups of families are significant because the diets of each group were analyzed in the same way.

HERE ARE QUESTIONS TO FACE

How many of the Nation's families are ill fed?
Who are the people with poor diets?
Do high incomes guarantee the right food?
Does it pay in better diets to produce food at home?
Must everyone change eating habits to get what his body needs?
What can people do for themselves to get better diets?
What can all of us working together do to improve the Nation's diets?

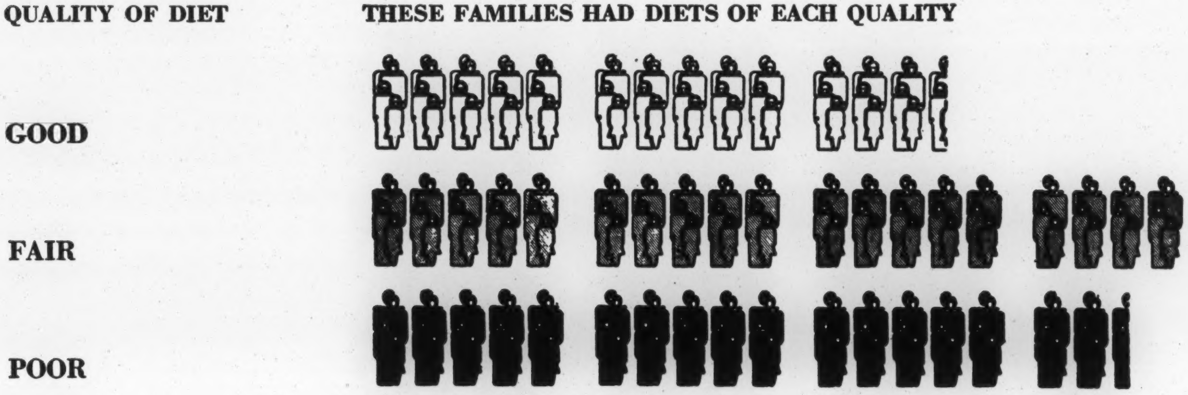
HOW WELL FED ARE WE IN THE UNITED STATES?

ABOUT ONE-FOURTH of the families in the United States with diets that could be rated good . . . more than a third, diets that might be considered fair . . . another third or more, diets that should be classed as poor—at least this seemed to be the situation at the time of the last survey. Clearly the United States has not solved its food problem.

The estimates just given are based on the 1935–36 distribution of consumer incomes and on the food-consumption patterns of families of different sizes in various income classes, as found in the cross-section study of diets.

The proportion of families with diets that are good would, of course, shift with changes in income distribution and in food-purchasing power. Even without changes in the economic situation the proportion with good diets could be greatly increased if all families used their resources for food to the best advantage.

Many families are ill fed



Each symbol represents 2 percent of the families in the United States.

MANY FAMILIES NEED MORE PROTECTIVE FOODS

EVERY FOOD can make some contribution to the diet. Some foods make a much more important contribution than others. What everybody needs for abundant health is a proper balance of many different kinds of food.

When diets are poor or only fair they are short in certain food values. Foods that are rich in these values have come to be called protective foods.

Protective foods not only protect against acute dietary diseases, they also help to lift bodies from a low to a higher level of good health.

The first foods to be called protective were milk and the green, leafy vegetables. They enrich diets greatly in calcium, vitamin A, riboflavin, and high-quality protein.

Recently other foods have been included in the protective list. These are the foods rich in the vitamins of the B group, especially the less highly refined flours and cereals. Still others are fruits and vegetables that are rich in vitamin C. In some areas the lean cuts of meat, rich in nicotinic acid and proteins of high nutritive value, may also be considered protective foods.

To what extent are our diets short in protective foods? Recent dietary studies show the Nation's need for: At least 10 to 20 percent more milk . . . 10 to 25 percent more butter . . . 25 to 70 percent more tomatoes and citrus fruit . . . and about twice as much of leafy, green, and yellow vegetables.

In fact we in this country would do well to use twice the quantity of dairy products now consumed, according to recognized experts in the field of nutrition.

MILLIONS OF PEOPLE HAVE POOR DIETS

NO TWO FAMILIES, free to choose, would make the same food selections. Each follows to some extent the habits handed down from past generations. Each is influenced also by personal likes and dislikes among the foods that are available in markets or through home production. Each is more or less bound by the cost of food and by the amount of money that can be spent for it.

Millions of families are not getting the foods their bodies need. Many lack the resources for an adequate food supply. They may have little money. They may not have the land, the equipment, the time, or the skills needed to raise part of their food at home.

Many families lack the knowledge and skills they need to choose foods wisely and to prepare them well. Furthermore, some have poor food habits and do not know, or do not believe, that it would be worth their while to change.

The millions of people in this country that have poor diets are not strangers. They are our neighbors. Some live in every community in every State. As a rule, relatively more of the ill-fed may be found in the lower income classes than in the higher . . . more in the larger families than in the smaller . . . more in the Southeast than in the North and West . . . more among Negro than among white families . . . more in the cities than on the farms.

The pages that follow show some of the differences in diet among various groups of people. These facts may focus attention on some of our Nation's dietary problems and may suggest ways of solving them.

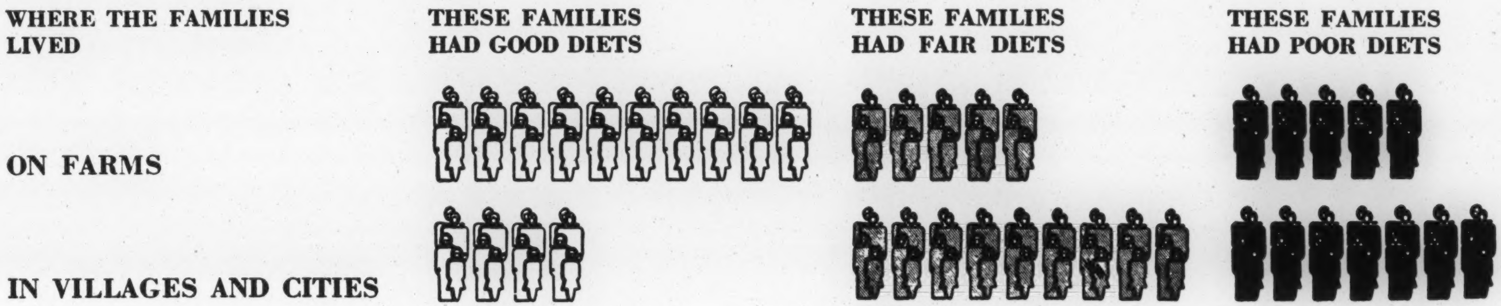
FARM FAMILIES FARE BETTER THAN VILLAGE OR CITY FAMILIES

MODERN farm families raise less of their own food than did the more self-sufficient families of a century ago. In fact, they spend more for food than for any other item. Yet the families on farms still obtain about two-thirds of their food directly from their own gardens, orchards, or fields and from their own milk cows, poultry flocks, and other livestock.

Relatively more nonrelief families on farms than in villages or cities have diets that are good; relatively fewer have poor diets. Well-planned home-production programs enable many to have diets rich in protective foods. However, farm families should not be self-satisfied. The diets of many need improvement.

The pictogram below shows that at the time of the survey about half of the nonrelief families on farms got diets that were classed as good but that at least a fourth had diets that were considered poor.

Many in each group need better diets



Each symbol represents 5 percent of nonrelief families.

FARM FAMILY DIETS INCLUDE MORE PROTECTIVE FOODS

THE MAJOR reason why farm family diets generally are better than those of village or city families is that farm families eat larger quantities of protective foods.

The following figures from four groups of self-supporting families in the Middle Atlantic and North Central States show this plainly. Families in two of the groups had incomes (cash and in kind) that were between $500 and $1,000. One group lived on farms; the other, in villages. Families in two other groups, one on farms and one in villages, had incomes between $1,000 and $1,500.

The figures below show how different their consumption of vitamin- and mineral-rich foods was during a week in the late spring or summer.

Protective foods are rich in minerals and vitamins

SOME OF THE FOODS THEY HAD	THESE ARE THE QUANTITIES HAD IN A WEEK BY FAMILIES With $500–$1,000 Incomes		With $1,000–$1,500 Incomes	
	ON FARMS	IN VILLAGES	ON FARMS	IN VILLAGES
MILK (OR ITS EQUIVALENT)....quarts	18	10	19	12
EGGS............................number	28	18	30	20
MEATS, POULTRY, FISH.........pounds	8	6	11	8
FRESH AND CANNED VEGETABLES (OTHER THAN POTATOES)....pounds	11	8	11	9
FRESH AND CANNED FRUITS...pounds	10	8	12	10

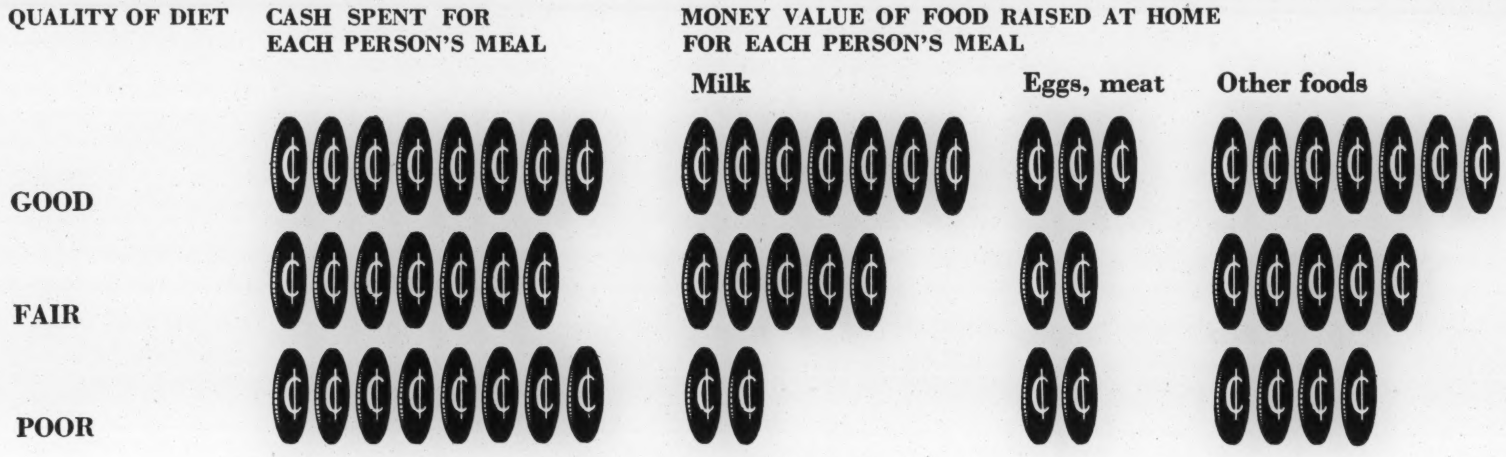
PRODUCING THE RIGHT FOOD HELPS FARM FAMILY DIETS

MONEY spent at the grocery store is less significant than the kind and amount of home-grown protective foods in determining the quality of diets that farm families in the lower income groups achieve.

Farm families with good home-production programs spend fewer dollars for food than do village or city families. But they pay a price for the food they raise. Home-grown foods cost work, day in and day out; they require planning; they involve investment and risk of capital. Overbalancing these costs, however, are the gains in better diets.

The relationship between quality of diet, cash expenditures for food, and foods raised for home use, is shown below for farm families in the Southeast with incomes (cash and in kind) between $500 and $1,000.

Home-grown protective foods make the difference



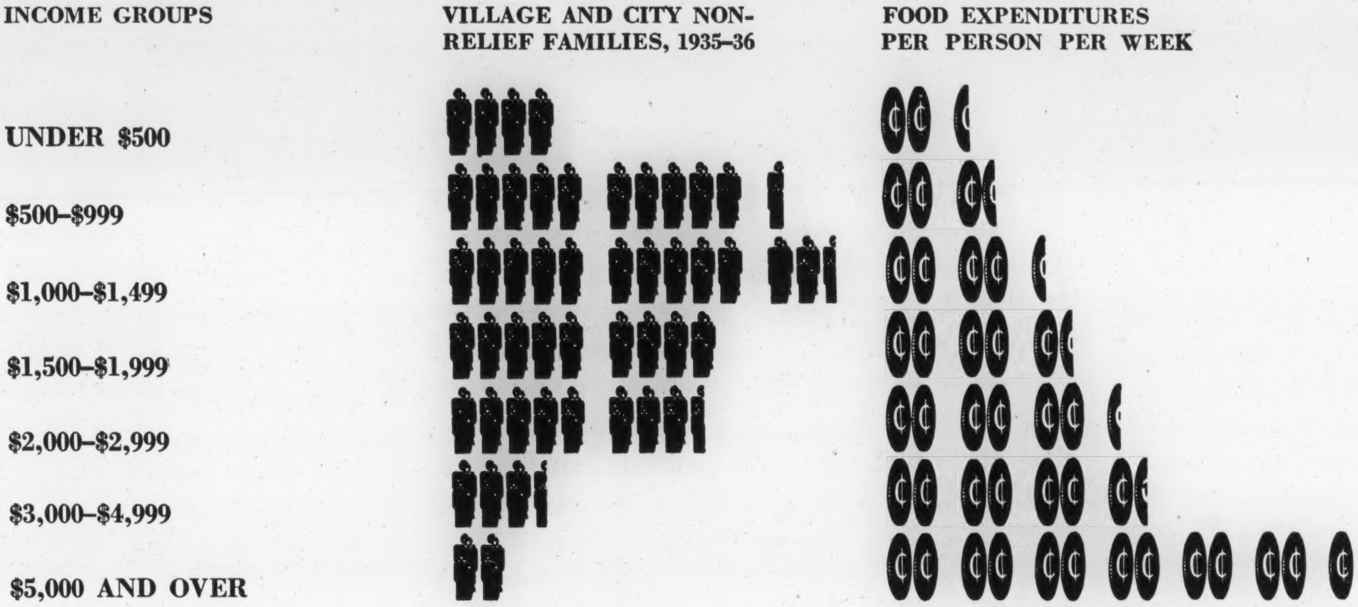
Each symbol represents half a cent's worth of food.

LOW INCOMES GIVE LITTLE MONEY FOR FOOD

FOOD expenditures are low in the lower income classes, which include a large proportion of the Nation's families. Careful planning and wise marketing are necessary if frugal food allowances are to supply all dietary needs.

The pictogram below shows how many self-supporting families in villages and cities had incomes in each class in 1935–36 and what was the average amount spent per week for the food of each person in the various income classes.

Millions of families have low incomes



Each symbol represents 2 percent of all nonrelief families.

Each symbol represents 50 cents' worth of food.

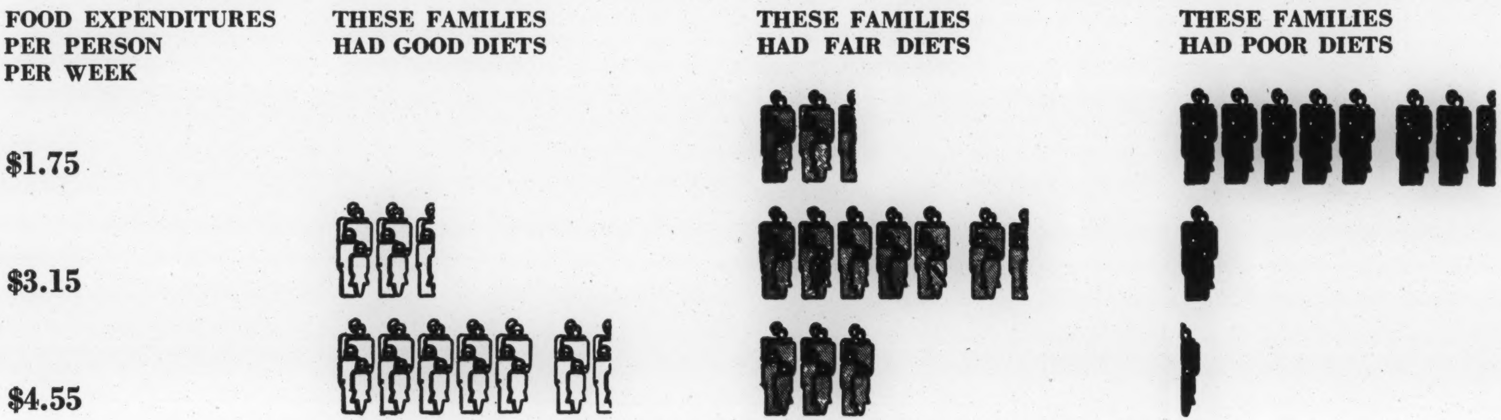
LARGE FOOD EXPENDITURES DO NOT GUARANTEE GOOD DIETS

IT COSTS a great deal of money to get satisfactory diets unless special care can be given to food buying, meal planning, and cooking. With little planning liberal-cost diets are likely to be better than those bought when money is scarce. But it is possible to spend a lot of money without buying all of the foods needed for good nutrition. High-priced foods may be no more nutritious than the cheap.

Appetite is not a safe guide. Malnutrition may exist in the midst of plenty if food is wasted or if well-balanced meals are refused by members of the family because of poor cooking, bad eating habits, or faddist ideas.

The pictogram shows the quality of diets obtained by village and city families in the North and West who spent three different amounts of money for the food of each person.

More money for food makes it easier to buy good diets



Each symbol represents 10 percent of the families at each food-spending level.

BIGGER FOOD OUTLAYS BRING MORE PROTECTIVE FOODS

PEOPLE who need not count pennies too carefully are likely to include liberal quantities of protective foods in their diets. Fortunately, the protective foods often are among those that families enjoy and use freely when they can afford them.

As purchases of protective foods increase, the likelihood of better diets increases. The figures below show how purchases of protective foods step up when families living in small cities have larger sums of money to spend for the food of each person.

The diets of three groups of families are compared: One group spent a total of $1.75 per person per week for all foods; another spent $3.15; the third spent $4.55.

An abundance of protective foods safeguards a diet

SOME OF THE FOODS THEY HAD		THESE ARE THE QUANTITIES EACH PERSON HAD IN A WEEK		
		$1.75 group	$3.15 group	$4.55 group
MILK (OR ITS EQUIVALENT)	pints	4	7	9
EGGS	number	3	5	8
MEATS, POULTRY, FISH	pounds	1½	2½	3½
TOMATOES, CITRUS FRUITS	pounds	1	1½	3
LEAFY, GREEN, AND YELLOW VEGETABLES	pounds	1	1½	2

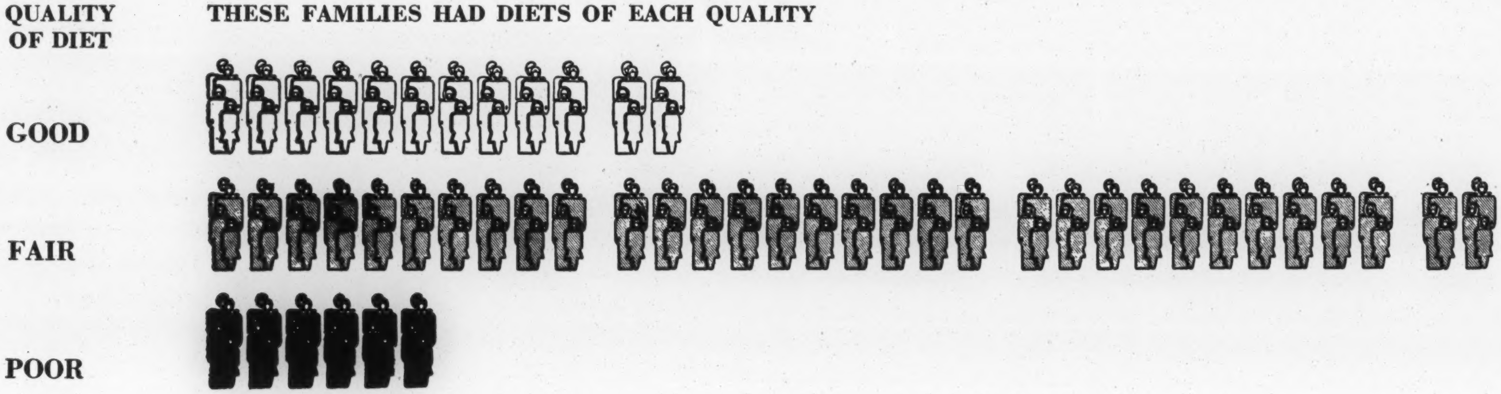
GOOD MANAGERS ACHIEVE BETTER DIETS THAN OTHERS

HOMEMAKERS who are good managers and good cooks and who keep up-to-date on food values and nutrition can make their dollars count for more in the health of their families than those who do not know how to plan or buy food wisely. Some forms of protective foods cost more than others. The job is to choose among them.

Whole-grain cereals cooked at home may take the place of the more expensive ready-to-eat kinds. Cheap cuts of meat for stews and pot roasts are as nutritious as steaks and chops. For many uses evaporated milk is as good as fresh milk. Standard grades of canned goods are as nourishing as those of fancy class.

The pictogram shows how families in villages and cities of the North and West who spent an average of 15 cents a person a meal differed in the quality of diet obtained. Half as many people got poor diets as got good.

Fifteen cents a meal can buy either a good or a poor diet



Each symbol represents 2 percent of families spending 15 cents a person a meal.

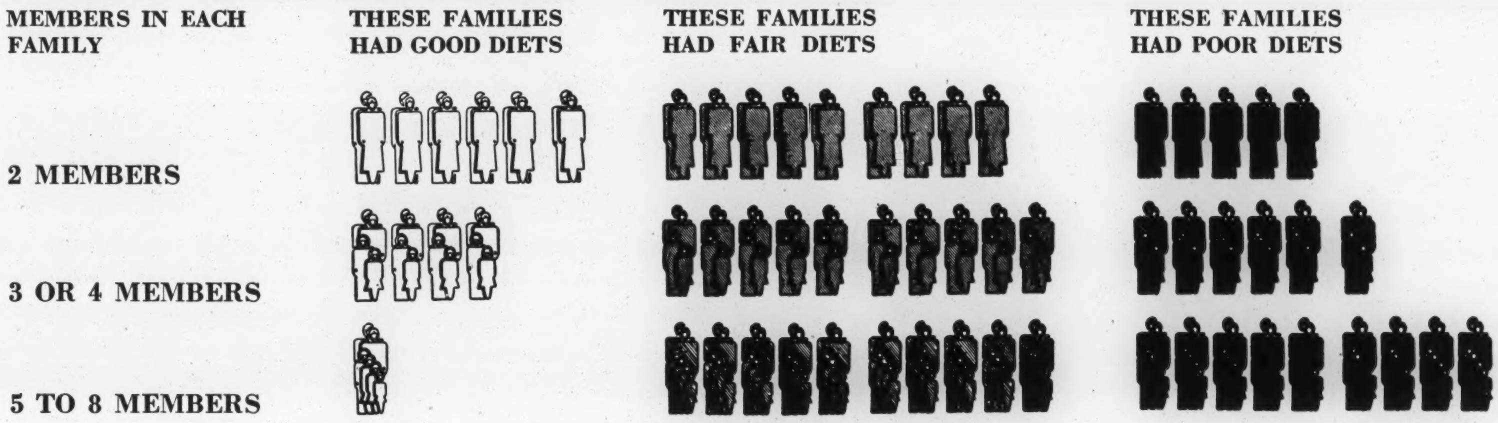
LARGE FAMILIES GENERALLY HAVE TO STRETCH THEIR FOOD DOLLARS

MORE MOUTHS to feed on a given income means less money for the food of each person, since the budget must cover an increasing number of other needs and wants. Indeed, large families need much higher incomes than small families to maintain comparable levels of diet.

For example, northern village families of two—husband and wife—whose incomes were between $500 and $750 in 1935–36 spent an average of 11 cents for food per person per meal. Families of three—parents and one child under 16—averaged this amount for food only when incomes reached $1,000 or more; families of seven or eight persons, only when incomes reached $2,000 or more.

The illustration below depicts the quality of diets of nonrelief families of different sizes in villages and cities of the North and West. Each group of families had the same average income within the range $500 to $2,000.

Small families fare better than large when incomes are equal



Each symbol represents 5 percent of the families in each group.

OCCUPATIONAL DIFFERENCES IN DIET REFLECT INCOME DIFFERENCES

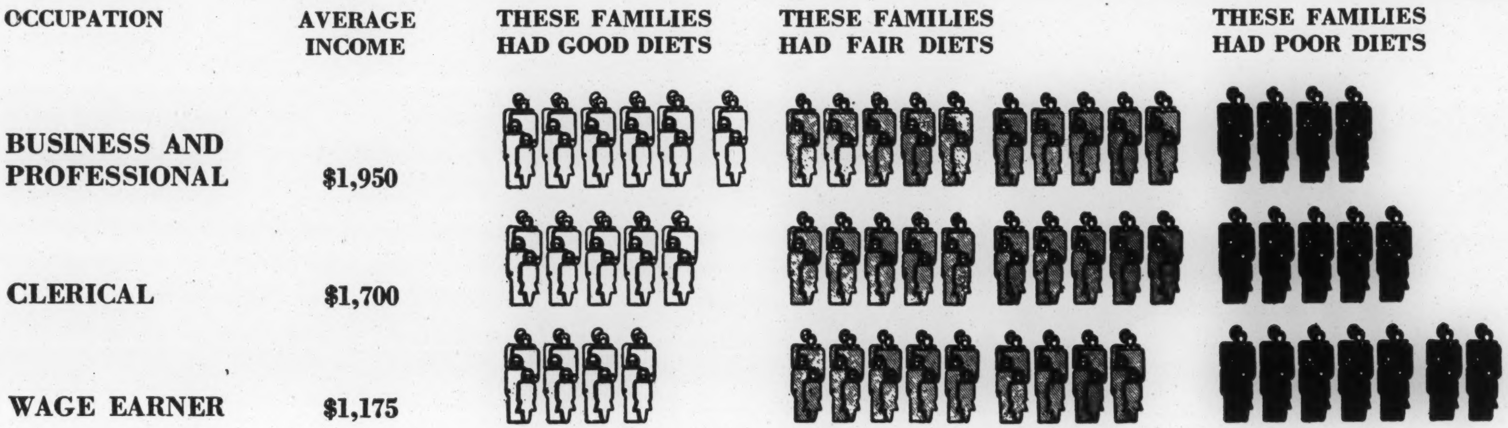
WAGE-EARNER families as a group are somewhat less likely to have good diets than families of clerical or business and professional workers, partly because their incomes are lower.

What makes the real difference between diets is not the nature of the breadwinner's job, whether it is in the white-collar or the blue-jeans class. The real determining factors are income, the amount that can be afforded for food, and the managerial ability and skill of the homemaker.

The pictogram below compares the diets of nonrelief families with incomes from different occupations. The records are from families in villages and cities of the North and West.

Average incomes are "median" incomes; that is, half the families earned more, half less, than these amounts.

Higher incomes help to bring better diets



Each symbol represents 5 percent of the families in each group.

FOOD MONEY BEING EQUAL DIET QUALITY DEPENDS ON FOOD SELECTED

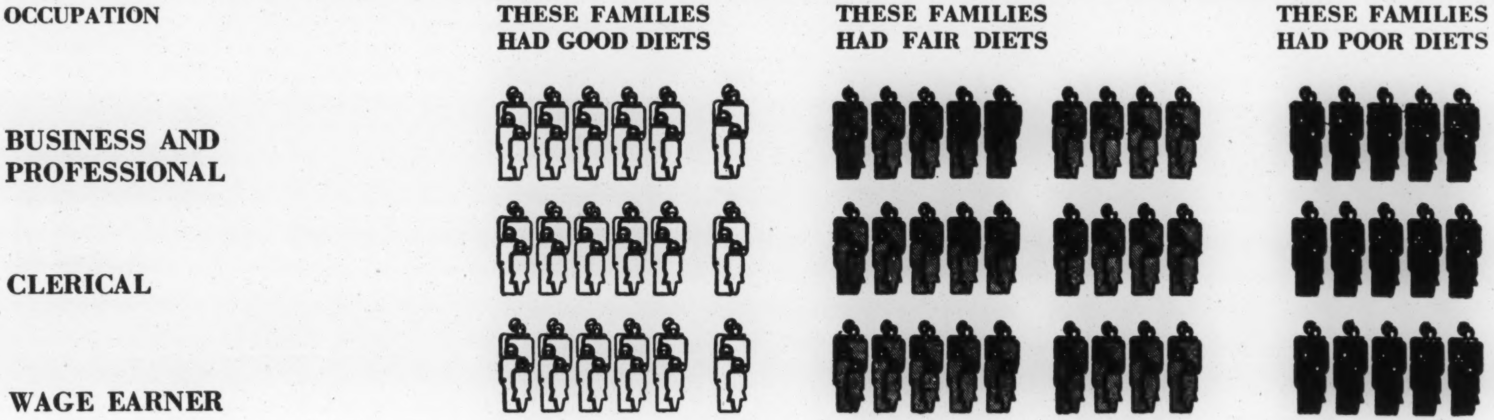
ONE OCCUPATIONAL group seems to be no more skillful than another in selecting foods that give good returns in nutrition when their circumstances are similar.

Given the same amount of money to spend for the food of each person, families whose earners were in the broad occupational groups listed below were about equally well fed.

The figures are from families spending the same average amounts for food within a range of 20 to 70 cents per person per day. The conclusions are based on records of the food bought by self-supporting families in villages and cities of the North and West.

In each occupational group some families achieved better diets than others.

Skillful food managers are found in every occupational group



Each symbol represents 5 percent of the nonrelief families in each group.

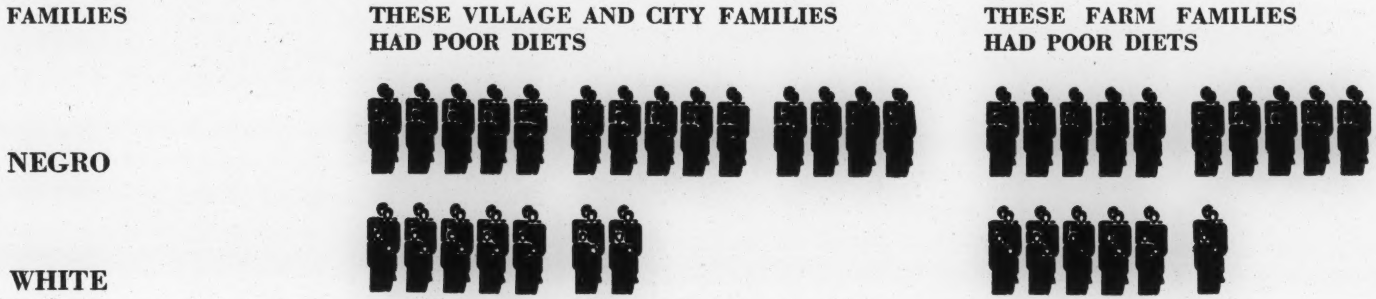
NEGRO FAMILIES FARE POORLY BECAUSE INCOMES ARE LOW

QUALITY of diet depends in large measure on the size of the family pocketbook and on the amount of money that can be spent for food, as preceding pages show.

Records of Negro family diets also bear this out. On the whole, Negro families have lower incomes than white families in the same community. In villages and cities of the Southeast, for instance, half of the nonrelief white families had incomes of $1,500 and over in 1935–36; half of the nonrelief Negro families had incomes of less than $460. On farms this median income (both money and nonmoney) for self-supporting white families was $940; for Negro families it was $520.

This pictogram shows that in the Southeast relatively more self-supporting Negro families than white had poor diets, both in villages or cities and on farms. Many families in each group had poor diets.

More Negro than white families had poor diets



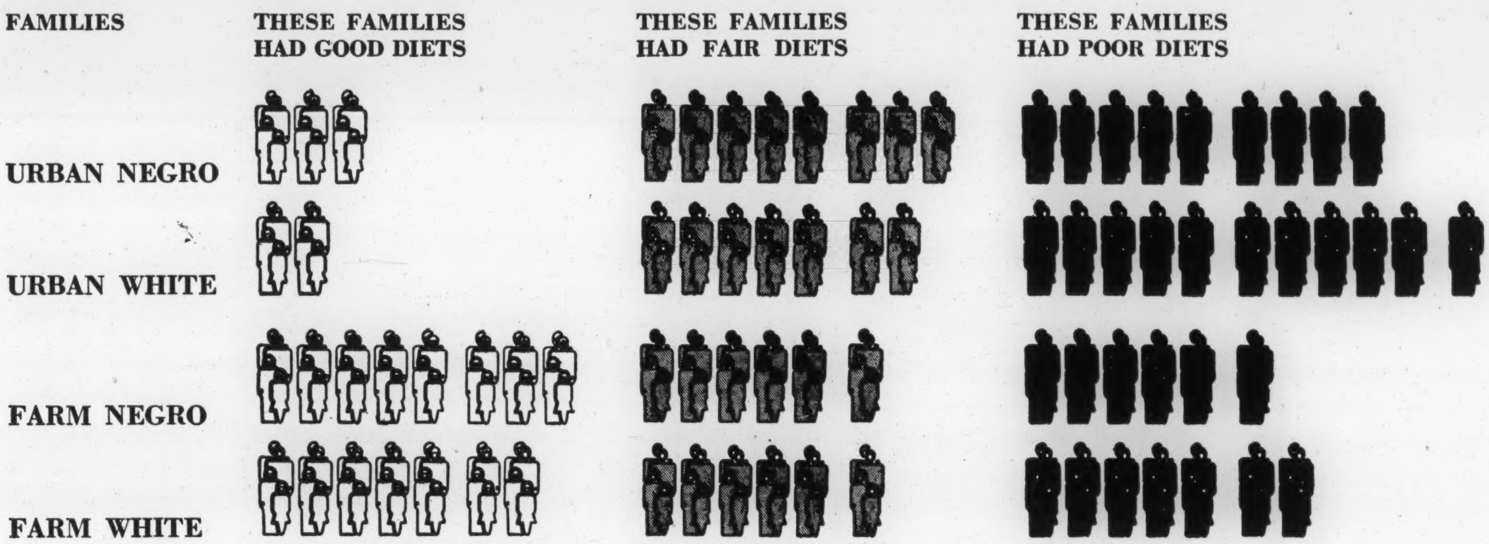
Each symbol represents 5 percent of the nonrelief families of each color in each locality in the Southeast.

NEGRO FAMILIES SPEND FOOD MONEY AS WISELY AS WHITE FAMILIES

THE NOTION that Negro families have low food standards is not upheld by diet records from the Southeast. When Negro and white families spent the same amounts of money for food, their diets rated good, fair, or poor in about the same proportions.

What happened when Negro and white families had food worth 10 cents a person a meal is shown below. Relatively few Negro families are well enough off to have as much as this for food. Many more white families can afford this amount.

Many families—both Negro and white—need better diets



Each symbol represents 5 percent of the nonrelief families of each color in the Southeast with food worth 10 cents a person a meal.

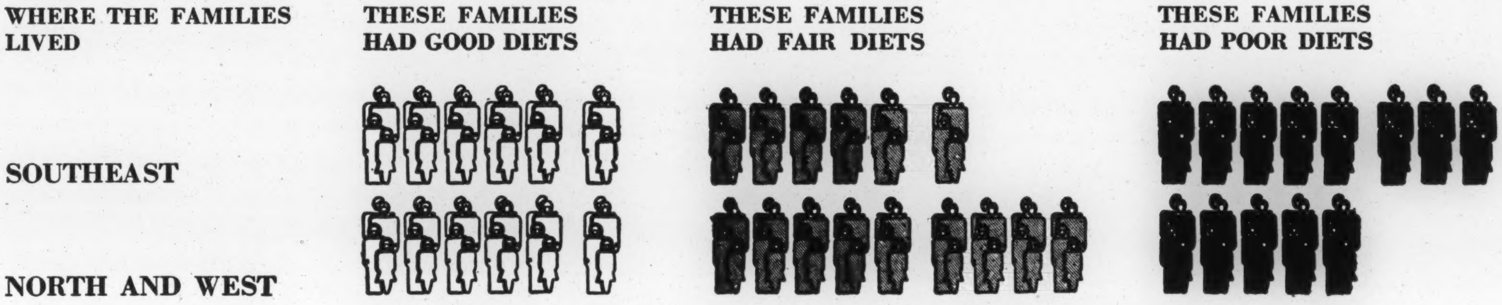
DIETS ARE BETTER IN THE NORTH AND WEST: SO ARE INCOMES

EVERY COMMUNITY in every part of the country knows that some families get better diets than others for the same money. Naturally, families in the higher income brackets spend more money for food, and more of them achieve good diets.

The pictogram below compares self-supporting families in the Southeast with those in the North and West in regard to diet quality. That there are relatively more families with poor diets in the Southeast reflects the comparatively low incomes of Negroes, sharecroppers, and unskilled workers.

The quality of diets in the Southeast tends to be poorer than in the North and West despite the fact that a large proportion of southern people live on farms and could improve their diets through home food production.

More families in the Southeast had poor diets



Each symbol represents 5 percent of the nonrelief families in each region.

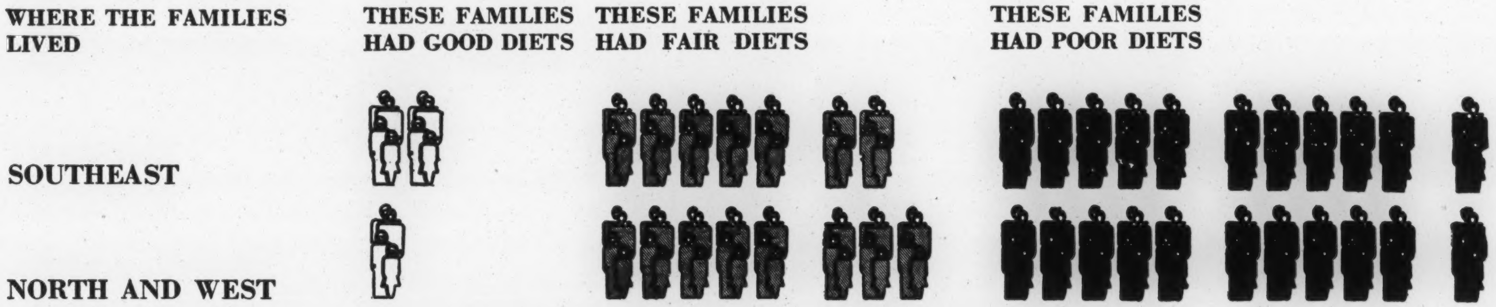
FOOD MONEY BEING EQUAL, SOUTHERN DIETS ARE AS GOOD AS ELSEWHERE

EACH SECTION of the country has its own special dishes developed from local foods that are cheap and abundant.

Everywhere ingenuity and skill are taxed to provide balanced and abundant meals when incomes are low. But given the same amount of money for food, southern families seem to have some advantage in achieving good diets. By using home-grown products as far as possible and by putting the money for food into the kinds that are low in cost but high in nutritive value, many southern families succeed in preparing meals that are both balanced and delicious for an unusually small outlay.

How the food-spending habits of white families in villages and cities in the two regions affected the quality of their diets is shown below. Each group spent an average of 10 cents a person a meal. Few families achieved good diets with this sum.

Many low-income families in both regions need better diets



Each symbol represents 5 percent of the families in each region spending 10 cents a person a meal.

THERE IS NO ONE PERFECT DIET PLAN

WAYS OF EATING in the United States are not the only good food patterns.

In the food habits of various countries there are many customs that families in the United States would do well to copy or retain. There are the dark breads and the cheeses of central Europe. There are the tender shoots, the green leaves, and the bean sprouts of the Orient. There are the soups and stews of many lands that use the nutrients of bone and marrow and vegetable juices.

Diets often are limited in variety by personal food likes and dislikes, by religious scruples, by allergies, or by disease. Even within such limits, good meals can be planned, but it takes more thought and knowledge to make sure that they supply what the body needs.

If orange juice is too expensive as a source of vitamin C, it is possible to use canned tomatoes, cabbage salad, or cheap fresh fruits in season.

If butter adds too many calories to the diet of overweight persons, they can get vitamin A from the green and yellow vegetables.

If for any reason expenditures for meats and poultry must be curtailed, a suitable assortment of fish, eggs, and milk may be used instead. If milk and dairy products cannot be eaten because a person is allergic to these foods, it is difficult, but not impossible, to supply the calcium and other values of milk from other foods.

Wise meal planners learn, too, the seasons when different foods are cheapest, the most economical forms in which each food comes, the most economical quantities in which to buy foods. Facts like these make better diets possible for any given sum.

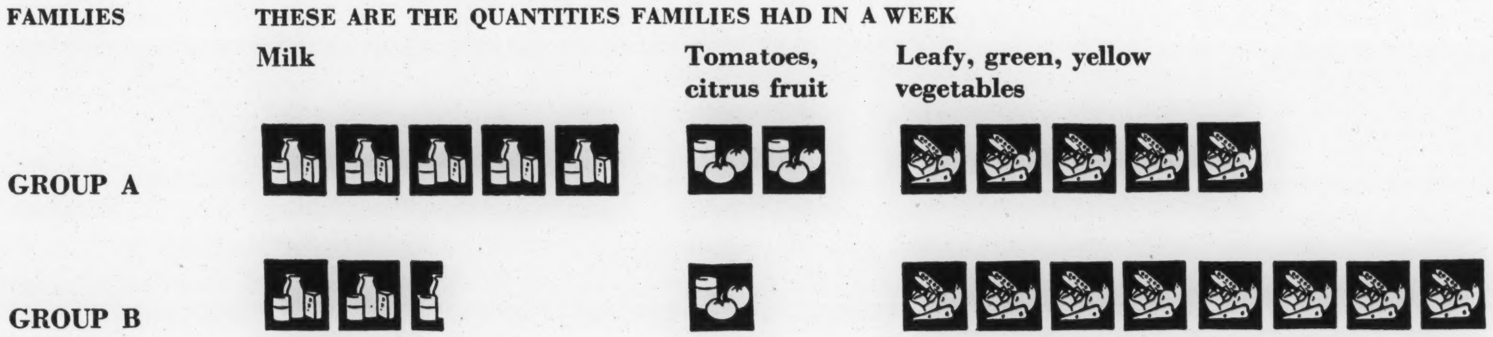
GOOD DIETS MAY FOLLOW DIFFERENT PATTERNS

IT'S ALL the nutritive values from all the foods in a meal that add up to a satisfactory or unsatisfactory total. There is no fixed quantity of specific foods that gives people good diets.

When prices or prejudices make it necessary or desirable to cut down on some one type of protective food, it often is possible to safeguard diets by using more of certain others. Many combinations of protective foods can make adequate diets.

The pictogram below shows the quantities of certain protective foods found in two types of diet each good from the standpoint of nutrition. The diets were not equally good, however; one was somewhat better than the other. These protective foods shown were, of course, supplemented by other foods. The diets illustrate the choices made by village families in the Southeast, each group spending an average of 25 cents per person per day for food.

Every good diet has its quota of protective foods



represents 4 quarts of milk represents 4 pounds of tomatoes and citrus fruit represents 2 pounds of leafy, green vegetables

WE ALL NEED THE RIGHT FOOD

BETTER DIETS might well come to mean greater vigor of body and mind on the job, a greener old age, and a longer, happier life.

Do we care enough for these things to change diet habits if need be?

Not only would each of us gain from good diets; the Nation would gain too. Never has the need been greater than now for citizens with bodies and minds ready to meet whatever the future may hold.

Habit is not a safe guide to good diets. The newer knowledge of nutrition must be put into practice throughout the length and breadth of the land. Families should know how to get the well-rounded and varied meals they need for what they can spend in money, time, and energy.

Some families need financial help. The resources of many in the lower income groups cannot provide adequate diets. These people need increased earnings. Many need further opportunities to produce food for home use. Some have no breadwinner and are dependent wholly or in part on public aid. Special programs such as the food-stamp plan, free school lunches, and low-priced milk are helping many needy families.

Our Nation is attacking the problem of nutrition on many fronts. But still other and better ways of thinking and doing can be developed if we put our minds to it.

The President of the United States has challenged us to become a unified nation, a people mentally and physically prepared to meet the responsibilities the world crisis forces upon us. To be so we must be well fed.

If malnutrition is like an iceberg, as one authority has suggested, and its greatest mass and greatest danger lie beneath the surface, then it is time for us to look beneath the surface for its hidden signs and causes and to do something about it.

WE HAVE A JOB TO DO

WE have a job to do. You, and I, and everyone. Our job is this: To make America strong . . . .

Defense is planes and guns. It is equipping an army to man our military weapons. It is this, and more. It is building the health, the physical fitness, the social well-being of all our people, and doing it the democratic way. Hungry people, under-nourished people, ill people, do not make for strong defense.

This, then, is our job, not all of it, but a vital part: Let us make every American strong, stronger than ever before, sturdier in body, steadier in nerves, surer in living.

HARRIET ELLIOTT, *Consumer Commissioner,*
National Defense Advisory Commission.

WHERE YOU CAN GET MORE INFORMATION

THIS REPORT is based on facts from the following publications, for sale by the Superintendent of Documents, Washington, D. C.

Send check, money order, or cash, not stamps.

Diets of families of employed wage earners and clerical workers in cities. U. S. Dept. Agr. Cir. 507, 141 pp., illus. 1939. 15 cents.

Family food consumption and dietary levels, five regions, farm series. U. S. Dept. Agr. Misc. Pub. 405, 393 pp., illus. 1941. (In press.)

Family food consumption and dietary levels, five regions, urban and village series. U. S. Dept. Agr. Misc. Pub. (In press.)

Food. Family expenditures in selected cities, 1935–36, v. 2, U. S. Dept. Labor Bul. 648, 406 pp., illus. 1940. 45 cents.

Here are some free publications, all available from the U. S. Department of Agriculture, Washington, D. C.

Diets to fit the family income. U. S. Dept. Agr. Farmers' Bul. 1757, 38 pp., illus. 1936.

Food for children. U. S. Dept. Agr. Farmers' Bul. 1674, 22 pp., illus. 1931.

Well-nourished children. U. S. Dept. Labor, Children's Bur. Folder 14, 16 pp. 1939. (In cooperation with U. S. Bureau of Home Economics.)

Eat the right food to help keep you fit. Bureau of Home Economics, U. S. Dept. Agr.; Children's Bureau, U. S. Dept. Labor; Office of Education and Public Health Service, Federal Security Agency. (In quantity, 35 cents a hundred; $3.25 a thousand.)

Consumers' Guide, published 20 times a year, includes many popularly written articles on nutrition and food buying. For sample copies write to Consumers' Counsel Division, United States Department of Agriculture. For bulletins on food preparation, conservation, and home-production, write to your State Agricultural College and Extension Service and to the United States Department of Agriculture, Washington, D. C.

U. S. GOVERNMENT PRINTING OFFICE 16—19920

~~[illegible]~~
~~Phillips~~
Return to Robinson

Should Miss
Stitt see this too?

Federal Security Agency
Social Security Board
Bureau of Employment Security
Reports and Analysis Division

FARM LABOR MARKET CONDITIONS

November 15-December 15, 1941

Summary

Employment on farms declined sharply during the period November 15 to December 15 in practically all States, canning, packing, and processing activities were completed in most areas. Total farm employment decreased from 10,420,000 on November 1 to 9,349,000 on December 1, according to estimates of the United States Department of Agriculture. The low point of the year's activity is usually reached during the month of January for the country as a whole. The drop in employment during November and December, however, is relatively greatest in the cotton-producing areas, which reach their peak labor requirements during this period, and is least in the dairy and corn States, where the late fall labor demand is smaller.

Seasonal farm work during this period was carried on only in a few areas, according to reports from the State divisions of the United States Employment Service.[1] Corn was still being harvested in the middle west, and several thousand workers were employed in Kentucky tobacco warehouses. Crop activities of major importance occurred only in sections of California, Florida, and the southern Range States (Arizona, New Mexico, and Texas), where workers were needed for citrus and cotton harvesting and for planting, cultivating, or harvesting of truck crops.

There was little difficulty in recruiting seasonal labor since total farm labor demand declined even in California and the Southwest. Dairy, farm, and ranch hands were obtained with less difficulty than in the summer months, when many States had noted a shortage of such workers. During the November-December period none of the dairy States reported difficulty in filling orders for dairy workers. One employment office in

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1/ Labor market reports are submitted monthly to the Bureau of Employment Security by the State divisions of the United States Employment Service. They cover the principal aspects of labor supply and demand in both industry and agriculture for each major economic region in the State.

south central Illinois was able to fill several openings for dairy and general farm hands at wages no higher than those of a year ago. Most of the demand for winter workers was confined to the North Central, Small-Grain, and Range States. The few recruitment problems that arose in parts of Illinois, Iowa, South Dakota, and Wisconsin were usually only temporary and were attributed in most cases to low wages or to poor housing conditions. Wages as low as $10, $15, and $20 per month, plus maintenance, were offered on some orders in sections of Illinois and the Dakotas.

Continued relaxation of previously established requirements for workers in some areas indicated that labor supplies were not as abundant as in previous winters. Farmers were willing to accept young boys and older men (even if they were not in the best physical condition) for farm work in Vermont and in some of the North Central States. Farm operators in Illinois and Iowa, on the other hand, still requested workers with experience in handling farm equipment; they continued to discriminate to some extent against minority groups and were reluctant to hire transients.

Farm operators in some areas were engaged in recruiting workers for the coming year. Iowa farmers retained help which they usually dismissed during winter months in order to have enough workers for "active" periods. Tenants and sharecroppers in Arkansas, Georgia, and Mississippi were reluctant to sign contracts to operate farms in 1942 because of real or imagined defense work opportunities.

Throughout the country, farm workers and operators, released from harvesting and processing employment, sought work on defense construction projects and in defense industries. A large number of farm workers succeeded in obtaining casual or other temporary employment; many others, however, remained unemployed. Migratory workers left for their home communities as farm opportunities declined. Farmers and housewives who had been employed in canneries and processing plants, returned to their previous occupations.

Detailed information on farm labor supply and demand during the November-December period is given below for States containing areas of major agricultural activity.

Florida

Citrus and truck crop activities increased in Florida during the period November 15-December 15, 1941, with truck farming at a seasonal peak in the central area. The Florida orange crop was estimated to be larger than that of the 1940-41 season; production of fresh vegetables was expected to exceed the 10-year (1931-40) average.

Although the seasonal migration of agricultural workers into central Florida was reported to be below normal, the supply of labor was generally adequate in this area. In the Arcadia section, however, where a shortage of farm hands was expected, qualified women were being recruited. There was also some difficulty in recruiting workers for the Tampa truck-crop area, reportedly due to the low wages paid--$1.50 to $2 per day.

In the southern part of the State, the usual supply of labor was insufficient to meet the increased demand resulting from good growing weather. Part of the difficulty resulted from the 30-to-40-day delay in the seasonal migration of workers into this area. By mid-December, however, this movement was estimated to be at normal levels, and consequently, sugar-cane workers for the Lake Okeechobee area were being recruited with less difficulty than in previous weeks.

The Florida division of the United States Employment Service was used by farmers to a greater extent than in previous years. In the West Palm Beach section, the Employment Service, Farm Security Administration, county agricultural agents, land use planning committees, and county and State officials were cooperating with growers to work out plans for the more efficient use of available labor supplies.

Texas

Harvesting of citrus and truck crops and planting of other vegetables became increasingly important in Texas during the period November 15 to December 15, 1941, while cotton-picking activities were declining. Growing conditions for citrus fruits in Texas were favorable, and production of both oranges and grapefruit was expected to exceed that of last season. Winter vegetable crops, with the exception of tomatoes, were making good progress; production is expected to be greater than in 1941.

Ample supplies of farm labor were available for vegetable planting and harvesting and for citrus harvesting in the Brownsville area of Texas during the November-December period. Migration into the area for citrus and vegetable work was increasing. Workers were reported coming from completed harvests elsewhere in Texas and from northern and western States, as far up as Michigan. Many of these farm laborers were residents of the Brownsville area returning home for winter work. It was estimated that about 13,000 vegetable planters and harvesters and 5,200 citrus workers would be required during December. There was also a sufficient number of workers for the planting of winter vegetables in the San Antonio section.

Wages for practically all agricultural work in the Brownsville area during this period were reported to be about 50 percent above last year's average. Earnings under piece-rate payments ranged from 75 cents to $1.50 per day in the winter garden section of the State.

Cotton picking in Texas was practically completed by December 15, 1941, except in the northern part of the State, and, even in this area, harvesting had passed its peak. About 7,000 cotton pickers migrated into north Texas during this period, but by December 15, with peak requirements past, 2,000 had departed.

Decreasing demand for cotton pickers forced thousands of laborers to leave northern and western Texas and the Dallas-Fort Worth area. Many of these workers went back to their homes in southern, central, and eastern Texas. Others returned to Arkansas, Louisiana, Mississippi, and Oklahoma; a large number moved west to Arizona. Those pickers who did not leave the cotton areas, as well as workers dismissed from cotton-compress and cotton-oil jobs, returned to self-employment on farms, obtained local employment of various sorts, were absorbed by the WPA, or continued to be unemployed. About 1,400 rice workers were laid off in eastern Texas during the November-December period. About 300 of these obtained road jobs; many others secured work as loggers. A number of the dismissed workers were added to WPA rolls or received Farm Security Administration assistance. A few qualified for national defense training courses.

Defense training schools were active in recruiting students from rural areas throughout the State, thus stimulating migration of farm workers to urban centers.

New Mexico

Cotton picking in New Mexico was practically completed by mid-December, but some work was still to be done in the lower Pecos Valley where poor weather conditions delayed the harvest. Truck-crop and broom-corn harvests were concluded. Workers migrating into New Mexico were notified at the ports of entry that farm jobs were available only in the Roswell cotton fields.

Inadequate housing which did not provide protection from the rain caused many workers to leave the Roswell area before cotton picking was completed, and fog prevented those who remained from getting into the fields till late in the morning. Wages were raised in order to obtain sufficient workers for the cotton harvest, and, by the end of the period, ranged from $1.25 to $1.50 per 100 pounds.

With the conclusion of the harvests throughout most of the State, agricultural workers returned to their homes, to previous employment, and to WPA projects. Some harvest hands secured new jobs, but many were out of work.

Demand for ranch workers increased in southeastern New Mexico, but no recruitment difficulties were reported.

Arizona

About 18,000 cotton pickers were engaged in picking the Arizona cotton crop during the period November 15 to December 15, a supply sufficient to meet the demand. Lettuce and other vegetable-packing activities were getting under way, with no recruitment difficulties reported.

Migration into Arizona for farm work was discouraged by the Employment Service to prevent unnecessary surpluses of workers for the cotton, fruit, and vegetable harvests. In-migration of agricultural workers from the East decreased during this period as did the number of cotton pickers coming from California; but the total volume of in-migration from California increased. Most of these workers passed through Arizona on their way home to New Mexico, Oklahoma, and Texas. Many Arizona workers also left for these States.

California

There were adequate supplies of farm labor in California during the November-December period.

Cotton picking continued to employ more than half of the laborers working in major California crops during the period November 15 to December 15, 1941. The number of cotton pickers employed in the San Joaquin Valley increased after picking conditions improved, but rains again reduced the numbers of workers to about 29,000 by December 13, when the harvest was estimated to be 60 percent completed. Throughout the period, demand for pickers exceeded the supply. Workers were hard to find and to keep because of the poor picking conditions and consequent low earnings. In some counties, wages were raised above the set minimum of $1.25 per 100 pounds, and some growers offered as high as $1.55 per 100 pounds in order to get their crop picked before the rainy season set in.

Migration from the cotton fields of the San Joaquin Valley was unusually heavy. Most of the movement was out-of-State; migration to Los Angeles County for industrial employment was less than that of previous winters. Migration into the San Joaquin area from the northern part of the State was not as great as expected.

The unusual November frost greatly reduced employment in the pea harvests of the San Joaquin and Imperial Valleys and practically terminated tomato and grape harvests. Other fall vegetable crops were damaged throughout the State. Supplies of vegetable harvesters were adequate in almost all sections. The number of workers released from pea picking was more than sufficient to harvest other crops in Imperial County. Picking of navel oranges was at peak in Tulare County and was beginning in the Imperial Valley. Pruning of fruit trees and vines began during this period; only in Merced County were workers insufficient to meet demand. Bean, rice, and sugar-beet harvesting was practically completed by mid-December.

In the week following the outbreak of war in the Pacific, there was a noticeable increase of migration out of California agricultural regions. Part of this movement to southwestern and mid-western States was attributed to the desire of workers to leave so-called "danger zones."

NATIONAL HEADQUARTERS
SELECTIVE SERVICE SYSTEM
21ST STREET AND C STREET, N. W.
WASHINGTON, D. C.

May 23, 1941

MEMORANDUM TO ALL STATE DIRECTORS (I-116)

SUBJECT: OCCUPATIONAL DEFERMENT--AGRICULTURE (III)

The following letter from the Secretary of Agriculture to the Acting Director of Selective Service is published for the information of all concerned. This memorandum will be disseminated to all local Selective Service agencies in your State. The importance of agriculture in the national defense program cannot be overestimated. The most serious consideration will be given to the information contained in the following letter by all local boards in examining claims for occupational deferment by those engaged in agricultural pursuits.

"Brig. Gen. Lewis B. Hershey,
Acting Director, Selective Service System,
Washington, D. C.

Dear General Hershey:

In cooperation with your office this Department has given and will continue to give close attention to the effect of the national defense program on the farmer and upon agricultural production.

Assurance of adequate food supplies not only for the United States but, under the Lend-Lease Act, for Great Britain and other nations resisting aggression makes it necessary to increase substantially the production of pork, dairy products, eggs, poultry, dried beans, and vegetables, and to at least maintain the production of feed grains, fruits, beef, and lamb at present levels.

The national defense program has drawn heavily upon the supply of farm labor and maintaining an adequate supply of farm workers for production of essential foods required for national defense is becoming a serious problem.

The problem is very serious in some areas; in others not acute. There has been a reduction in the supply of available farm labor in the major geographic divisions of the United States between April 1, 1940, and April 1, 1941, by the following percentages: New England, 25.1 percent; Middle Atlantic States, 25.9 percent; East North Central States, 21.6 percent; West North Central States, 16.1 percent; South Atlantic States, 18.4 percent; East South Central States, 11.6 percent; West South Central States, 13.5 percent; Mountain States, 15.7 percent; Pacific States, 19.3 percent. The decrease for the United States as a whole during this period was 17.8 percent.

These declines in some areas of course have not brought about shortages in the supply of farm labor owing to the large surpluses of labor supply existing in the spring of 1940. However, in other States and sections of States the decreases have produced a serious shortage of regular farm labor. The shortages of regular laborers are reported from the following areas: (1) The ten States between New Hampshire and Virginia along the Atlantic Seaboard, Vermont, and the two States of Ohio and Michigan--in these States general farm labor shortages now exist; (2) the States of North Carolina, South Carolina, and Georgia--in these States farm labor shortages exist around defense activities; (3) Indiana, Illinois, southern Wisconsin, Minnesota, and Arizona--in these States farm labor shortages are confined to special areas or crops. The most acute shortages are in New England and the Middle Atlantic States. The acute shortages of regular farm laborers in North Carolina, South Carolina, and Georgia center largely around defense activities. In Ohio, Indiana, southern Wisconsin and Illinois the shortage appears to be acute in the dairy and truck crop areas and in those areas surrounding defense activities.

We have informed our field representatives that the operators of many family-sized farms are requesting occupational deferment when in fact they should be claiming deferment on account of dependency. These are cases in which the father is too old or infirm to operate the farm or a widowed mother is dependent upon the income from the farm and the income is not sufficient to hire outside help.

This Department desires to help in every way possible to make farmer registrants and farm operators aware of the principles of Selective Service, their rights and privileges under the law, and the functions of the local board.

We are making special studies of particularly critical types of farming and farming areas and as promptly as additional information on the current farm labor situation becomes available I will transmit it to you. Let me urge that, to the greatest extent possible, the Selective Service System give very careful consideration to the workers urgently needed for production of the foods vital to defense, so that the agricultural industries producing food for defense will have an adequate supply of labor.

I appreciate the splendid cooperation of your office and your deep appreciation of the problem of American agriculture in this emergency.

Sincerely yours,

(Signed) CLAUDE R. WICKARD

Secretary"

Lewis B. Hershey

LEWIS B. HERSHEY
Deputy Director

LBH/kj